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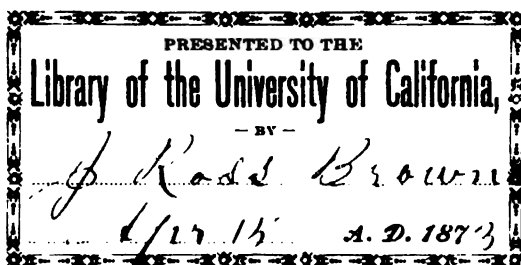
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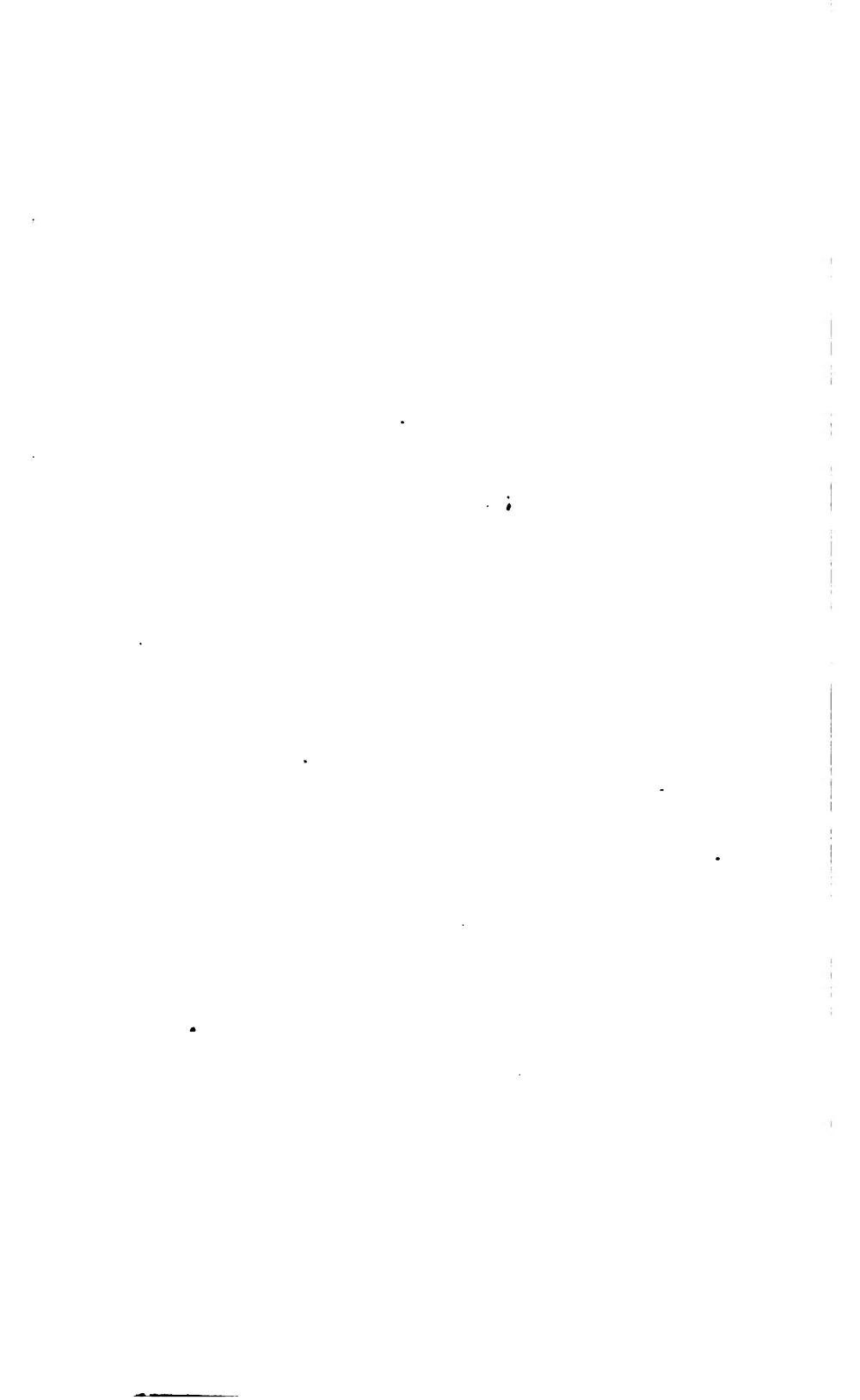
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Hon J. Ross Browne

with best regards of

J. H. Milliamy

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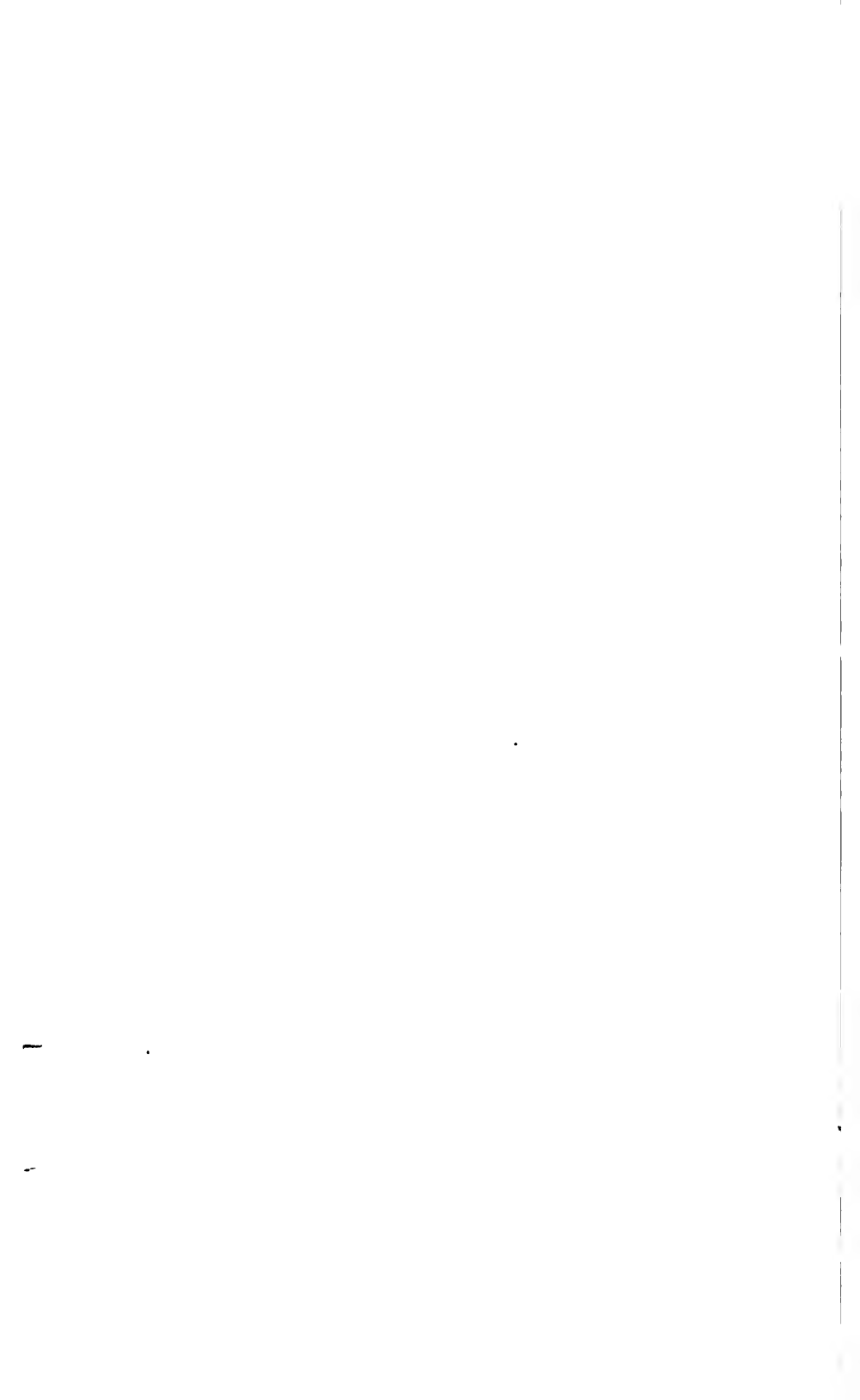
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1917

THE

CHINESE COMMERCIAL GUIDE.



THE
CHINESE COMMERCIAL GUIDE,

CONTAINING

TREATIES, TARIFFS, REGULATIONS, TABLES, ETC.,
USEFUL IN THE TRADE TO CHINA & EASTERN ASIA;

WITH AN

APPENDIX OF SAILING DIRECTIONS
FOR THOSE SEAS AND COASTS.

BY

S. WELLS WILLIAMS, LL.D.

Fifth Edition.

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TO
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OF SHANGHAI,

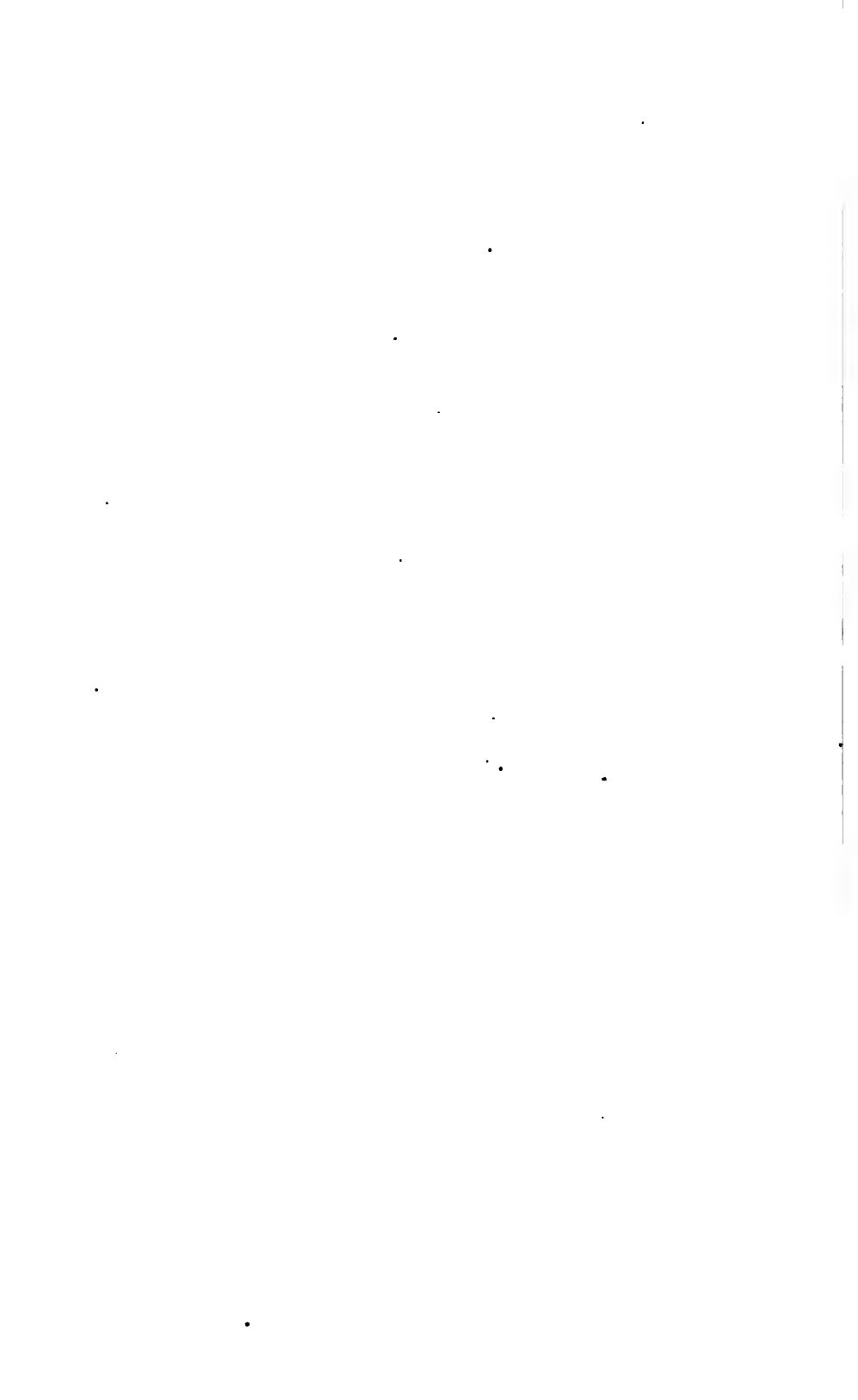
THIS WORK IS INSCRIBED, AS A MARK OF RESPECT FOR

HIS CHARACTER AS A PHILANTHROPIST

AND MERCHANT,

BY HIS FRIEND,

The Compiler.



P R E F A C E.

THE favour with which former editions of the Chinese Commercial Guide have been received by the mercantile community, indicates that such a compilation meets their wants. The last edition, published at Canton in 1856, contained the treaties and regulations for foreign trade then in force in China, Japan, and Siam, with such additional information respecting the commerce of those countries as could be collected. These treaties and regulations have been mostly superseded by subsequent arrangements, which have extended the commercial as well as political relations of western nations with those kingdoms, and also laid, it is hoped, the basis of new principles of intercourse and better security for the future. The operations of these new arrangements have not yet been fully developed, and further experience is required to show which of them will prove most beneficial, and which of them need alteration or rejection. In China particularly, very important stipulations are contained in the four treaties of 1858,—calculated, in their full development, to introduce radical changes in the policy of its rulers towards foreign nations. Among these, the right of residences at Peking for the representation of the treaty powers, the opening of the navigation of the Yangtze' Kiang to foreign vessels, and the employment of foreigners in the revenue service at the open ports, are points which involve results of the greatest moment, affecting even the welfare and stability of the empire. The operations of the treaties with Japan have already introduced great commotions and party-disputes among the rulers of that feudal monarchy, which may not improbably result in radical changes in the government of the country.

The principle of ex-territoriality conceded in all the treaties with these nations, involves in itself alone many serious ques-

tions of international law (of which it now forms no part in European diplomacy) that must ere long be settled by some better mode than yet exists; for its tendency to impair the supreme rights of the native authorities within their own boundaries in all mixed cases demands great vigilance on the part of the high contracting parties, both foreign and native. One danger in the working of this principle lies in the ignorance of the native rulers, especially in China, of the limits of their own powers; and another, equally detrimental, lies in their inertness in doing even what they know should be done, and acknowledge to be right. Consequently their subjects learn to lean more and more upon the strong and vigorous arm of foreigners, and look away from their own authorities, for redress, protection, and safety, in times of trouble or cases of dispute.

Still the advantages which attend the carrying out of the provisions of these recent treaties with the three great empires of Eastern Asia are, on the whole, likely to be greater than their difficulties; and amidst all the imperfections and hindrances connected with these efforts to bring these peoples into their place among the family of nations, progress has been made. The treaties are no doubt far beyond the intelligence of even the rulers in all their bearings, and it is well that they should have a higher standard constantly before them than they would propose if left to themselves; but a reasonable hope may be indulged that more real benefits may be conferred by foreign influence acting through the operations of these treaties among the three nations than in any other way. It is by comparing the present condition of foreign intercourse in each of them with what it was at the expiration of the charter of the East India Company in 1834, that the advances really made can be best understood.

The preparation of this edition of the Guide has involved more labour than the previous ones; partly caused by the distribution of the foreign trade in China among many ports, whose extremes are nearly two thousand miles apart, and partly in collecting the details respecting the articles and management of the trade, and other points of information usually sought for in a work of this nature. When Canton and Shanghai engrossed four-fifths of the foreign trade, the details and regulations relating to it at those two ports supplied

pretty much all that was necessary for all China; but when further research showed that every port in the country has its local usages, careful investigation at each was necessary to entire accuracy. This has not been practicable to the degree that was desirable, and this explanation must be taken as the reason and the apology for what is found to be incorrect,—but much more, for what has been omitted.

During the printing of the book, several new regulations have been issued affecting the trade at various ports along the coast, some of them of minor and local operation, and others of a general nature. Among the former is the settlement of the rates of pilotage in and out of the River Min. The Chinese authorities at Fuhchau have lately included the three ports in Formosa, Taiwan, Tanshwui, and Kilung, under the jurisdiction of the Customs at that port, from whence passes for goods and vessels are now issued. The trade with these three places in that island is likely to develop slowly, and not to attain much importance soon at either of them.

The most important change of a general nature relates to the abolition of exemption certificates, which was proposed by Tsung-hau, the superintendent of the three northern ports stationed at Tientsin, for reasons very similar to those already alluded to on page 201. He and other officers stationed at the minor ports found that the amount of goods passing through the Customs bore an unduly large proportion to the revenue obtained from them, and demanded some change so as to equalize the receipts on the whole foreign trade. This was brought about by the publication of the following notice:—

“From and after the — day of — next, no more exemption certificates will be issued by the Customs; but any merchant re-exporting imports, their marks being unchanged, and the conditions of the Treaty effecting them otherwise being fulfilled, will receive instead a “drawback,” on the face of which it will be stated that the same may be tendered by any merchant in payment of any duties, whether import or export, within the port at which it is issued; but that it will not be a valid tender in payment of duties at any other port.”

This change in the plan of paying the duties has already gone into effect, and its advantages over the old system are already appreciated. It involves a modification of Art. XIV. of the British treaty, Art. XXI. of the American. and Art. XXIV. of the French treaty, which will of course be readily made by the contracting parties. The blanks given on pages 174 and 273 are consequently no longer issued. The whole transaction affords a good example of the readiness with which modifications seen to be desirable by those engaged in them

can be brought about when the Chinese authorities are convinced of their propriety,—and much more so when, as in this instance, they make the first suggestion.

In addition to the favourable arrangement, by which the duties on goods are received by those officers who are made responsible for their proper application, the Chinese authorities have extended the time of three months allowed upon native produce coming down the Yangtz' and stored for reshipment at Shanghai, to a period of one year. This is at present made applicable only at that port, where most of the native produce designed for re-exportation is warehoused, and the regulations inserted on pages 200 and 210 are consequently to be altered to meet this modification.

The difficulties and delays attending the discharge and lading of ships lying outside the bar of Taku have been seriously felt by all parties, but most of them must remain irremediable, until proper tug-boats and lighters are obtained. However, still further to reduce the delay in a ship's business, in addition to the rule already in force of obtaining security for payment of duties on exports, the following notice has been issued, by which all complaints against the Customs on the head of impeding trade would seem to be removed:—

NOTICE RESPECTING CLEARING VESSELS AT TIENTSIN.

When the import cargo as described in the manifest presented on the vessel's arrival outside the bar, or in the port of Taku, shall have all passed the Customs' office at Taku, and a report to that effect shall have been received from the tide-surveyor stationed there, the captain or consignee of the vessel, if he desire to clear her outwards, without further delay, will hand into the Customs a memorandum, particularizing exactly the nature of the cargo imported, names of consignees, &c.; and the Customs, being satisfied of the accuracy of this memorandum, will thereon compute the duty due upon the cargo of the vessel, and will require of the captain or consignee either a bond or other sufficient security for the amount—such security to be cancelled as soon as the whole of the cargo shall have been cleared. This security being given, the vessel will receive her port-clearance. Any master or consignee not desiring to avail himself of this rule will have to clear his vessel in the manner prescribed by the treaty.

Since the revised regulations of trade on the Yangtz', given on page 208, have gone into operation, the traffic on that river has been carried on with less violation of law and order. These regulations were simultaneously agreed to at Peking in November, 1862, by the ministers of Great Britain, Russia, and the United States, when they were proposed for their acceptance by the Chinese; and were published under the authority of each minister to their countrymen in China. They will no doubt receive the approval of the representatives of all other treaty powers. The three ports on the Yangtz' now opened to foreign

commerce must be regarded for the present as rather maritime ports, like those along the coast, than as internal towns; but with this difference, that the river banks between them must soon feel the influence of the traffic, and the towns near them ere long participate in it more directly than they are now able to do. The alteration or enlargement of regulations of trade are now far more readily obtained from the Chinese authorities than was formerly the case; and if peace be restored to the empire, it is probable that they may see their way clear to open the trade of other rivers to foreign vessels.

The foreign trade with Japan and Siam is conducted according to the treaties in its leading forms; but the local usages at the open ports, with details of weights, exchanges, packing, &c., and the history of the leading articles of commerce, are imperfectly described. A large field of inquiry lies open throughout Eastern Asia for the inquiring naturalist; and the two sections which describe the articles of Import and Export give only a portion of what is needed for a full understanding of the trade with these regions.

The sections on the currency, weights, measures, time, &c., of China and the adjacent countries, will prove useful to the merchant in explaining the principles on which Eastern nations have tried to settle them; and showing some of the diversities found in actual use. Those for Siam have been made up chiefly from the Calendar printed at Bangkok by Rev. D. B. Bradley; and those for Japan corrected by the tables in the Phrase-book of Rev. S. R. Brown. Correction will probably be required here and there in the sections on these subjects. One may here be introduced, rectifying information given on pages 217 and 280, regarding the trade of Niuchwang. "A *shih* or stone of small green peas weighs 454 lbs. at Yingtaz; of large green peas, 418 lbs.; of yellow peas No. 1, 413 lbs.; of No. 2, 403 lbs.; and of No. 3, 400 lbs.; of millet seed, 424 lbs.; and of millet rice, 436 lbs. These discrepancies arise from the variations in the measures used to contain a *shih*. A single bean-cake averages 64 lbs., and a picul at Yingtaz equals 90 catties of the treaty standard; but 104.3 taels are equal to 100 taels at Canton."

The tables in Chap. VII., for estimating prices, measurement of goods, exchanges, &c., have been selected from those constantly in use among the foreign merchants in China. Those for calculating the prices of tea in dollars or pence have been

copied from the more extended tables, by the kind permission of the author, P. Loureiro, Esq. The last section of the same chapter, on "Movements in Bullion," has been prepared and furnished for the Guide by Patrick R. Harper, Esq., of the Commercial Bank of India at Hongkong, who has had much experience in the exchanges and movements of the precious metals in Eastern Asia.

The Appendix of Sailing Directions has been reprinted from the China Pilot. With short interruptions, the coasts from Singapore to Hakodadi are all described in it; and for the Chinese coasts, the Directions have been improved by the insertion of the Chinese characters for the names of all places that could be ascertained.

The best mode of spelling the names of places in the Guide and in the Sailing Directions has been a question of some difficulty. Those in the latter have been altered in very few places. There is no standard for writing Chinese sounds, for the people themselves do not write sounds; and it is not easy to choose the best mode from the several plans adopted by English, French, or Portuguese authors to express even the same sound; while the diversity among the people themselves, arising from the dialectical variations, increases the perplexity of the choice. In most cases, the mandarin pronunciation has prevailed over the local name, as in *Shanghai*, *Taiwan*, &c., and this rule is preferable in all cases, though it is now too late to change names like *Amoy*, *Swatow*, or *Canton*, to *Hiamun*, *Shantau*, or *Kwangchau*. In the present work, every Chinese name has been written in the court dialect where it has been worth while to follow it, the exceptions being chiefly the names of islands and places along the coast better known by their local pronunciations. In all, the sounds of the vowels, *a*, *e*, *i*, and *u* are generally spoken more like those given in France than in England, viz., as *ah*, *ey*, *e*, and *oo*, though there are numerous exceptions.

In fine, this edition of the Chinese Commercial Guide has been made as complete as the nature of the subjects treated of in it, and the circumstances attending their elaboration, would permit. Excuses for imperfections are often only lame apologies for deficiencies that should have been supplied; and this work must rest on its fitness for the end designed.

S. W. W.

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A

COMMERCIAL GUIDE.

CHAPTER I.

FOUR TREATIES WITH CHINA.

Section 1.

TREATY WITH GREAT BRITAIN.

TREATY OF PEACE, FRIENDSHIP, COMMERCE, AND NAVIGATION, BETWEEN HER MAJESTY AND THE EM- PEROR OF CHINA.

SIGNED AT TIENTSIN, JUNE 26TH, 1858.

RATIFICATIONS EXCHANGED AT PEKING, OCTOBER 24TH, 1860.

HER Majesty the QUEEN of the United Kingdom of Great Britain and Ireland, and his Majesty the EMPEROR of China, being desirous to put an end to the existing misunderstanding between the two countries, and to place their relations on a more satisfactory footing in future, have resolved to proceed to a revision and improvement of the treaties existing between them; and for that purpose have named as their plenipotentiaries, that is to say:—

Her Majesty the Queen of Great Britain and Ireland, the right honourable the EARL OF ELGIN AND KINCARDINE, a peer of the United Kingdom, and Knight of the most Ancient and most Noble Order of the Thistle;

And his Majesty the Emperor of China, the high Commissioners KWEILIANG, a senior chief Secretary of State, styled of the East Cabinet, Captain-General of the plain white Banner of the Manchu Banner force, Superintendent-General of the administration of criminal law; and HWAHANA, one of his Imperial Majesty's expositors of the Classics, Manchu President of the office for the regulation of the Civil Establishment, Captain-General of the bordered blue Banner of the Chinese Banner force, and visitor of the Office of Interpretation;

Who, after having communicated to each other their respective full powers, and found them to be in good and due form, have agreed upon and concluded the following articles:—

c. g. 1

Treaty of Nanking confirmed, and Treaty of the Bogue abrogated.

ART. I.—The treaty of peace and amity between the two nations, signed at Nanking on the twenty-ninth day of August, in the year eighteen hundred and forty-two, is hereby renewed and confirmed.

The Supplementary Treaty and General Regulations of Trade having been amended and improved, and the substance of their provisions having been incorporated in this treaty, the said Supplementary Treaty and General Regulations of Trade are hereby abrogated.

Ministers to be reciprocally accredited between the Courts.

(French, Art. II.)

ART. II.—For the better preservation of harmony in future, her Majesty the Queen of Great Britain and his Majesty the Emperor of China mutually agree that, in accordance with the universal practice of great and friendly nations, her Majesty the Queen may, if she see fit, appoint ambassadors, ministers, or other diplomatic agents to the Court of Peking; and his Majesty the Emperor of China may, in like manner, if he see fit, appoint ambassadors, ministers, or other diplomatic agents, to the Court of St James.

British Minister may reside at Peking.

(American, Art. V.—French, Art. II.—Russian, Art. II.)

ART. III.—His Majesty the Emperor of China hereby agrees, that the ambassador, minister, or other diplomatic agent, so appointed by her Majesty the Queen of Great Britain, may reside, with his family and establishment, permanently at the capital, or may visit it occasionally, at the option of the British government. He shall not be called upon to perform any ceremony derogatory to him as representing the sovereign of an independent nation on a footing of equality with that of China. On the other hand, he shall use the same forms of ceremony and respect to his Majesty the Emperor as are employed by the ambassadors, ministers, or diplomatic agents of her Majesty towards the sovereigns of independent and equal European nations.

It is further agreed, that her Majesty's government may acquire at Peking a site for building, or may hire houses for the accommodation of her Majesty's mission, and that the Chinese government will assist it in so doing.

Her Majesty's representative shall be at liberty to choose his own servants and attendants, who shall not be subjected to any kind of molestation whatever.

Any person guilty of disrespect or violence to her Majesty's representative, or to any member of his family or establishment, in deed or word, shall be severely punished.

British Ministers free to travel and send Couriers.

(American, Art. V.—French, Art. II.—Russian, Arts. II and X.)

ART. IV.—It is further agreed, that no obstacle or difficulty shall be made to the free movements of her Majesty's representative, and that

he, and the persons of his suite, may come and go, and travel at their pleasure. He shall, moreover, have full liberty to send and receive his correspondence to and from any point on the sea-coast that he may select; and his letters and effects shall be held sacred and inviolable. He may employ, for their transmission, special couriers, who shall meet with the same protection and facilities for travelling as the persons employed in carrying dispatches for the Imperial government; and generally, he shall enjoy the same privileges as are accorded to officers of the same rank by the usage and consent of western nations.

All expenses attending the diplomatic mission of Great Britain [in China] shall be borne by the British government.

British Minister to confer with high Chinese Officers.

(American, Arts. IV. and VIII.—Russian, Art. II.)

ART. V.—His Majesty the Emperor of China agrees to nominate one of the Secretaries of State, or a President of one of the Boards, as the high officer with whom the ambassador, minister, or other diplomatic agent of her Majesty the Queen shall transact business, either personally or in writing, on a footing of perfect equality.

Ministers received at the Court of St James from Peking.

(French, Art. II.)

ART. VI.—Her Majesty the Queen of Great Britain agrees that the privileges hereby secured shall be enjoyed in her dominions by the ambassadors, ministers, or diplomatic agents of the Emperor of China, accredited to the Court of her Majesty.

British Consuls to reside at the open Ports; their relative Rank.

(American, Art. X.—French, Art. V.—Russian, Arts. II. and V.)

ART. VII.—Her Majesty the Queen may appoint one or more consuls in the dominions of the Emperor of China; and such consul or consuls shall be at liberty to reside in any of the open ports or cities of China, as her Majesty the Queen may consider most expedient for the interests of British commerce. They shall be treated with due respect by the Chinese authorities, and enjoy the same privileges and immunities as the consular officers of the most favoured nation.

Consuls and vice-consuls in charge shall rank with intendants of circuits; vice-consuls, acting vice-consuls, and interpreters, with prefects. They shall have access to the official residences of these officers, and communicate with them, either personally or in writing, on a footing of equality, as the interests of the public service may require.

Toleration of the Christian Religion.

(American, Art. XXIX.—French, Art. XIII., and Convention, Art. VI.—Russian, Art. VIII.)

ART. VIII.—The Christian religion, as professed by Protestants or Roman Catholics, inculcates the practice of virtue, and teaches man to do as he would be done by. Persons teaching it or professing it, therefore, shall alike be entitled to the protection of the Chinese authorities; nor

shall any such, peaceably pursuing their calling, and not offending against the laws, be persecuted or interfered with.

Travel into the Interior with Passports.

(French, Arts. VII. and XXXIII.—Russian, Art. VII.)

ART. IX.—British subjects are hereby authorized to travel, for their pleasure or for purposes of trade, to all parts of the interior, under passports which will be issued by their consuls, and countersigned by the local authorities. These passports, if demanded, must be produced for examination in the localities passed through. If the passport be not irregular, the bearer will be allowed to proceed, and no opposition shall be offered to his hiring persons or hiring vessels for the carriage of his baggage or merchandize. If he be without a passport, or if he commit any offence against the law, he shall be handed over to the nearest consul for punishment, but he must not be subjected to any ill-usage in excess of necessary restraint. No passport need be applied for by persons going on excursions from the ports open to trade to a distance not exceeding 100 li, and for a period not exceeding five days.

The provisions of this article do not apply to crews of ships, for the due restraint of whom regulations will be drawn up by the consul and the local authorities.

To Nanking, and other cities disturbed by persons in arms against the government, no pass shall be given until they shall have been recaptured.

The Yangtsz' River to be opened to British Trade.

(French, Art. VI.)

ART. X.—British merchant-ships shall have authority to trade upon the Great River (Yangtsz'). The upper and lower valley of the river being, however, disturbed by outlaws, no port shall be, for the present, opened to trade, with the exception of Chinkiang, which shall be opened in a year from the date of the signing of this treaty.

So soon as peace shall have been restored, British vessels shall also be admitted to trade at such ports as far as Hankow, not exceeding three in number, as the British minister, after consultation with the Chinese secretary of state, may determine shall be ports of entry and discharge.

Chinese Ports opened to British Trade, and Privileges thereof.

(American, Arts. XII. and XIV.—French, Arts. VI. and X.—Russian, Art. III.)

ART. XI.—In addition to the cities and towns of Canton, Amoy, Fuhchau, Ningpo, and Shanghai, opened by the treaty of Nanking, it is agreed that British subjects may frequent the cities and ports of Newchwang, Tangchow, Taiwan (Formosa), Chauchow (Swatow), and Kiungchow (Hainan).

They are permitted to carry on trade with whomsoever they please, and to proceed to and fro at pleasure with their vessels and merchandize.

They shall enjoy the same privileges, advantages, and immunities at the said towns and ports as they enjoy at the ports already opened to

trade, including the right of residence, of buying or renting houses, of leasing land therein, and of building churches, hospitals, and cemeteries.

Regulations about getting Land or Buildings.

(American, Art. XII.—French, Art. X.—Russian, Art. V.)

ART. XII.—British subjects, whether at the ports or at other places, desiring to build or open houses, warehouses, churches, hospitals, or burial-grounds, shall make their agreement for the land or buildings they require at the rates prevailing among the people, equitably, and without exaction on either side.

British subjects can employ Natives of China.

(American, Art. XVII.—French, Art. XI.)

ART. XIII.—The Chinese government will place no restrictions whatever upon the employment, by British subjects, of Chinese subjects in any law ful capacity.

Chinese Boats can be freely hired.

(American, Art. XVII.—French, Art. XVIII.)

ART. XIV.—British subjects may hire whatever boats they please for the transport of goods or passengers, and the sum to be paid for such boats shall be settled between the parties themselves, without the interference of the Chinese government. The number of these boats shall not be limited, nor shall a monopoly in respect either of the boats or of the porters or coolies engaged in carrying the goods, be granted to any parties. If any smuggling takes place in them, the offenders will, of course, be punished according to law.

Chinese Authorities have no Jurisdiction over British Subjects.

(American, Art. XXVII.—French, Arts. XXXIX. and XII.)

ART. XV.—All questions in regard to rights, whether of property or person, arising between British subjects, shall be subject to the jurisdiction of the British authorities.

Each Nation to judge and punish its own Criminals.

(American, Art. XI.—French, Art. XXXVIII.—Russian, Art. VII.)

ART. XVI.—Chinese subjects who may be guilty of any criminal act towards British subjects, shall be arrested and punished by the Chinese authorities, according to the laws of China.

British subjects who may commit any crime in China, shall be tried and punished by the consul, or other public functionary authorized thereto, according to the laws of Great Britain.

Justice shall be equitably and impartially administered on both sides.

British Consul to hear and decide Disputes.

(American, Art. XXVIII.—French, Art. XXXV.)

ART. XVII.—A British subject having reason to complain of a

Chinese, must proceed to the consulate and state his grievance. The consul will inquire into the merits of the case, and do his utmost to arrange it amicably. In like manner, if a Chinese have reason to complain of a British subject, the consul shall no less listen to his complaint, and endeavour to settle it in a friendly manner. If disputes take place of such a nature that the consul cannot arrange them amicably, then he shall request the assistance of the Chinese authorities, that they may together examine into the merits of the case, and decide it equitably.

Protection of Lives and Property of British Subjects.

(American, Art. XI.—French, Art. XXXVI.—Russian, Art. I.)

ART. XVIII.—The Chinese authorities shall at all times afford the fullest protection to the persons and property of British subjects, whenever these shall have been subjected to insult or violence. In all cases of incendiarism or robbery, the local authorities shall at once take the necessary steps for the recovery of the stolen property, the suppression of disorder, and the arrest of the guilty parties, whom they will punish according to law.

Pirates to be punished and Property restored.

(American, Art. XIII.—French, Art. XXXIV.)

ART. XIX.—If any British merchant-vessel, while within Chinese waters, be plundered by robbers or pirates, it shall be the duty of the Chinese authorities to use every endeavour to capture and punish the said robbers or pirates, and to recover the stolen property, that it may be handed over to the consul for restoration to the owner.

Shipwrecked Crews to be kindly treated.

(American, Art. XIII.—French, Art. XXX.—Russian, Art. VI.)

ART. XX.—If any British vessel be at any time wrecked or stranded on the coast of China, or be compelled to take refuge in any port within the dominions of the Emperor of China, the Chinese authorities, on being apprised of the fact, shall immediately adopt measures for its relief and security; the persons on board shall receive friendly treatment, and shall be furnished, if necessary, with the means of conveyance to the nearest consular station.

Criminals and Deserters to be mutually given up.

(American, Art. XVIII.—French, Art. XXXII.)

ART. XXI.—If criminals, subjects of China, shall take refuge in Hongkong, or on board the British ships there, they shall, upon due requisition by the Chinese authorities, be searched for, and, on proof of their guilt, be delivered up.

In like manner, if Chinese offenders take refuge in the houses or on board the vessels of British subjects at the open ports, they shall not be harboured or concealed, but shall be delivered up, on due requisition by the Chinese authorities, addressed to the British consul.

Debts and Debtors to be mutually prosecuted.

(American, Art. XXIV.—French, Art. XXXVII)

ART. XXII.—Should any Chinese subject fail to discharge debts incurred to a British subject, or should he fraudulently abscond, the Chinese authorities will do their utmost to effect his arrest, and enforce recovery of the debts. The British authorities will likewise do their utmost to bring to justice any British subject fraudulently absconding or failing to discharge debts incurred by him to a Chinese subject.

Chinese Debtors who abscond from Hongkong to be sought for.

ART. XXIII.—Should natives of China who may repair to Hongkong to trade, incur debts there, the recovery of such debts must be arranged for by the English courts of justice on the spot; but should the Chinese debtor abscond, and be known to have property, real or personal, within the Chinese territory, it shall be the duty of the Chinese authorities, on application by, and in concert with, the British consul, to do their utmost to see justice done between the parties.

British Subjects to pay the Duties according to the Tariff.

(American, Art. XV.—French, Arts. XIX. and XXVII)

ART. XXIV.—It is agreed that British subjects shall pay, on all merchandize imported or exported by them, the duties prescribed by the tariff; but in no case shall they be called upon to pay other or higher duties than are required of the subjects of any other foreign nation.

Time for paying the Duties.

(American, Art. XXII.—French, Art. XXI)

ART. XXV.—Import duties shall be considered payable on the landing of the goods, and duties of export on the shipment of the same.

British Tariff of 1842 to be revised at Shanghai.

(American, Art. XV.—French, Art. XXVII)

ART. XXVI.—Whereas the tariff fixed by Article X. of the Treaty of Nanking, and which was estimated so as to impose on imports and exports a duty at about the rate of five per cent. *ad valorem*, has been found, by reason of the fall in value of various articles of merchandize therein enumerated, to impose a duty upon these considerably in excess of the rate originally assumed as above to be a fair rate, it is agreed that the said tariff shall be revised; and that as soon as the treaty shall have been signed, application shall be made to the Emperor of China to depute a high officer of the Board of Revenue, to meet, at Shanghai, officers to be deputed on behalf of the British government, to consider its revision together, so that the tariff, as revised, may come into operation immediately after the ratification of this treaty.

Decennial Revision of the Tariff.

(French, Art. XXVII.)

ART. XXVII.—It is agreed that either of the high contracting parties to this treaty may demand a further revision of the tariff, and of the commercial articles of this treaty, at the end of ten years; but if no demand be made on either side within six months after the end of the first ten years, then the tariff shall remain in force for ten years more, reckoned from the end of the preceding ten years; and so it shall be, at the end of each successive ten years.

Transit Duties on Goods to be adjusted.

(French, Art. XXIII.)

ART. XXVIII.—Whereas it was agreed in Article X. of the Treaty of Nanking, that British imports, having paid the tariff duties, should be conveyed into the interior free of all further charges, except a transit duty, the amount whereof was not to exceed a certain percentage on tariff value; and whereas no accurate information having been furnished of the amount of such duty, British merchants have constantly complained that charges are suddenly and arbitrarily imposed by the provincial authorities as transit duties upon produce on its way to the foreign market, and on imports on their way into the interior, to the detriment of trade; it is agreed that, within four months from the signing of this treaty, at all ports now open to British trade, and within a similar period at all ports that may hereafter be opened, the authority appointed to superintend the collection of duties shall be obliged, upon application to the consul, to declare the amount of duties leviable on produce between the place of production and the port of shipment, and upon imports between the consular port in question and the inland markets named by the consul; and that a notification thereof shall be published in English and Chinese for general information.

But it shall be at the option of any British subject, desiring to convey produce purchased inland to a port, or to convey imports from a port to an inland market, to clear his goods of all transit duties, by payment of a single charge. The amount of this charge shall be leviable on exports at the first barrier they may have to pass, or, on imports, at the port at which they are landed; and on payment thereof, a certificate shall be issued, which shall exempt the goods from all further inland charges whatsoever.

It is further agreed, that the amount of this charge shall be calculated, as nearly as possible, at the rate of two and a half per cent *ad valorem*, and that it shall be fixed for each article at the conference to be held at Shanghai for the revision of the tariff.

It is distinctly understood, that the payment of transit dues, by commutation or otherwise, shall in no way affect the tariff duties on imports or exports, which will continue to be levied separately and in full.

Rate of Tonnage Dues; free time to be allowed Ships.

(American, Art. XVI.—French, Art. XXII.)

ART. XXIX.—British merchant-vessels, of more than one hundred

and fifty tons burden, shall be charged tonnage dues at the rate of four mace per ton ; if of one hundred and fifty tons and under, they shall be charged at the rate of one mace per ton.

Any vessel clearing from any of the open ports of China for any other of the open ports, or for Hongkong, shall be entitled, on application of the master, to a special certificate from the customs, on exhibition of which she shall be exempted from all further payment of tonnage-dues in any open port of China for a period of four months, to be reckoned from the date of her port-clearance.

Two Days allowed to a Ship to report at the Customs.

(American, Art. XIX.—French, Art. XX.)

ART. XXX.—The master of any British merchant-vessel may, within forty-eight hours after the arrival of his vessel, but not later, decide, to depart without breaking bulk, in which case he will not be subject to pay tonnage-dues. But tonnage-dues shall be held due after the expiration of the said forty-eight hours. No other fees or charges upon entry or departure shall be levied.

Passenger Boats free; Cargo Boats taxable.

(American, Art. XVI.—French, Art. XXII.)

ART. XXXI.—No tonnage-dues shall be payable on boats employed by British subjects in the conveyance of passengers, baggage, letters, articles of provision, or other articles not subject to duty, between any of the open ports. All cargo boats, however, conveying merchandize subject to duty, shall pay tonnage dues once in four months at the rate of one mace per register ton.

Facilities to assist in entering Ports.

(American, Art. XVI.)

ART. XXXII.—The consuls and superintendents of customs shall consult together regarding the erection of beacons or lighthouses, and the distribution of buoys and lightships, as occasion may demand.

Duties payable to Government Bankers.

(American, Art. XXII.—French, Art. XXI.)

ART. XXXIII.—Duties shall be paid to the bankers, authorized by the Chinese Government to receive the same in its behalf, either in sycee or in foreign money, according to the assay made at Canton on the thirteenth of July, one thousand eight hundred and forty-three.

Standard Weights and Measures to be furnished.

(French, Art. XXVI.)

ART. XXXIV.—Sets of standard weights and measures, prepared according to the standard issued to the Canton custom house by the Board of Revenue, shall be delivered by the superintendent of customs to the Consul at each port, to secure uniformity and prevent confusion.

Pilots to be freely employed.

(American, Art. XVII.—French, Art. XV.)

ART. XXXV.—Any British merchant-vessel arriving at one of the open ports shall be at liberty to engage the services of a pilot to take her into port. In like manner, after she has discharged all legal dues and duties, and is ready to take her departure, she shall be allowed to select a pilot to conduct her out of port.

Custom House Officers to be near or in British Ships.

(American, Art. XVIII.—French, Art. XVI.)

ART. XXXVI.—Whenever a British merchant-vessel shall arrive off one of the open ports, the superintendent of customs shall depute one or more customs officers to guard the ship. They shall either live in a boat of their own or stay on board the ship, as may best suit their convenience. Their food and expenses shall be supplied them from the custom house, and they shall not be entitled to any fees whatever from the master or consignee. Should they violate this regulation, they shall be punished proportionately to the amount exacted.

Ships to be reported in Two Days ; Manifests.

(Commercial Rule, VI.—American, Art. XIX.—French, Art. XVII.)

ART. XXXVII.—Within twenty-four hours after arrival, the ship's papers, bills of lading, &c., shall be lodged in the hands of the Consul, who will, within a further period of twenty-four hours, report to the superintendent of customs the name of the ship, her register tonnage, and the nature of her cargo. If, owing to neglect on the part of the master, the above rule is not complied with within forty-eight hours after the ship's arrival, he shall be liable to a fine of fifty taels for every day's delay: the total amount of penalty, however, shall not exceed two hundred taels.

The master will be responsible for the correctness of the manifest, which shall contain a full and true account of the cargo on board. For presenting a false manifest, he will subject himself to a fine of five hundred taels; but he will be allowed to correct, within twenty-four hours after delivery of it to the customs' officers, any mistake he may discover in his manifest, without incurring this penalty.

Goods not be discharged till a Permit is granted.

(American, Art. XIX.—French, Art. XVII.)

ART. XXXVIII.—After receiving from the consul the report in due form, the superintendent of customs shall grant the vessel a permit to open hatches. If the master shall open hatches, and begin to discharge any goods without such permission, he shall be fined five hundred taels, and the goods discharged shall be confiscated wholly.

Permits required for landing or shipping Cargo.

(American, Art. XIX.—French, Art. XVII.)

ART. XXXIX.—Any British merchant who has cargo to land or

ship must apply to the superintendent of customs for special permit. Cargo landed or shipped without such permit will be liable to confiscation.

Transhipment of Goods by Permit.

(American, Art. XXXIII.—French, Art. XXV.)

ART. XL.—No transhipment from one vessel to another can be made without special permission, under pain of confiscation of the goods so transhipped.

Port-clearance granted when a Ship's Dues are paid.

(American, Art. XXII.—French, Art. XXI.)

ART. XLI.—When all dues and duties shall have been paid, the superintendent of customs shall give a port-clearance, and the consul shall then return the ship's papers, so that she may depart on her voyage.

Mode of estimating Duties on certain Goods.

(American, Art. XX.—French, Art. XXI.)

ART. XLII.—With respect to articles subject, according to the tariff, to an *ad valorem* duty, if the British merchant cannot agree with the Chinese officer in affixing a value, then each party shall call two or three merchants to look at the goods, and the highest price at which any of these merchants would be willing to purchase them, shall be assumed as the value of the goods.

Disputes respecting Tare or other Points.

(American, Art. XX.—French, Art. XIX.)

ART. XLIII.—Duties shall be charged upon the net weight of each article, making a deduction for the tare weight of congee, &c. To fix the tare on any article such as tea, if the British merchant cannot agree with the custom house officer, then each party shall choose so many chests out of every hundred, which being first weighed in gross, shall afterwards be tared, and the average tare upon these chests shall be assumed as the tare upon the whole; and upon this principle shall the tare be fixed upon all other goods and packages. If there should be any other points in dispute which cannot be settled, the British merchant may appeal to his consul, who will communicate the particulars of the case to the superintendent of customs, that it may be equitably arranged. But the appeal must be made within twenty-four hours, or it will not be attended to. While such points are still unsettled, the superintendent of customs shall postpone the insertion of the same in his books.

Reduction of Duty on damaged Goods.

(French, Art. XIX.)

ART. XLIV.—Upon all damaged goods a fair reduction of duty shall be allowed, proportionate to their deterioration. If any disputes arise, they shall be settled in the manner pointed out in the clause of this treaty having reference to articles which pay duty *ad valorem*.

Imports sent to other Ports in China or abroad.

(American, Art. XXI.—French, Art. XXIV.)

ART. XLV.—British merchants who may have imported merchandize into any of the open ports, and paid the duty thereon, if they desire to re-export the same, shall be entitled to make application to the superintendent of customs, who, in order to prevent fraud on the revenue, shall cause examination to be made by suitable officers, to see that the duties paid on such goods, as entered in the custom house books, correspond with the representation made, and that the goods remain with their original marks unchanged. He shall then make a memorandum on the port-clearance of the goods, and of the amount of duties paid, and deliver the same to the merchant; and shall also certify the facts to the officers of customs of the other ports. All which being done, on the arrival in port of the vessel in which the goods are laden, everything being found on examination there to correspond, she shall be permitted to break bulk and land the said goods, without being subject to the payment of any additional duty thereon. But if, on such examination, the superintendent of customs shall detect any fraud on the revenue in the case, then the goods shall be subject to confiscation by the Chinese Government.

British merchants desiring to re-export duty-paid imports to a foreign country, shall be entitled, on complying with the same conditions as in the case of re-exportation to another port in China, to a drawback-certificate, which shall be a valid tender to the customs in payment of import or export duties.

Foreign grain brought into any port of China in a British ship, if no part thereof has been landed, may be re-exported without hindrance.

Chinese Authorities to prevent Smuggling.

ART. XLVI.—The Chinese authorities at each port shall adopt the means they may judge most proper to prevent the revenue suffering from fraud or smuggling.

British Vessels to trade only at open Ports.

(American, Art. XIV.—French, Art. VII.)

ART. XLVII.—British merchant-vessels are not entitled to resort to other than the ports of trade declared open by this treaty. They are not unlawfully to enter other ports in China, or to carry on clandestine trade along the coasts thereof. Any vessel violating this provision, shall, with her cargo, be subject to confiscation by the Chinese Government.

Goods and Vessels liable to be seized when smuggling.

(American, Art. XIV.—French, Art. XXVIII.—Russian, Art. IV.)

ART. XLVIII.—If any British merchant-vessel be concerned in smuggling, the goods, whatever their value or nature, shall be subject to confiscation by the Chinese authorities, and the ship may be prohibited

from trading further, and sent away as soon as her accounts shall have been adjusted and paid.

Confiscations to accrue to the Chinese.

(American, Art. XIV.—French, Art. XXVIII.)

ART. XLIX.—All penalties enforced, or confiscations made, under this treaty, shall belong and be appropriated to the public service of the government of China.

Language of official Correspondence.

(French, Art. III.)

ART. L.—All official communications, addressed by the diplomatic and consular agents of her Majesty the Queen to the Chinese authorities, shall, henceforth, be written in English. They will for the present be accompanied by a Chinese version, but it is understood that, in the event of there being any difference of meaning between the English and Chinese text, the English Government will hold the sense as expressed in the English text to be the correct sense. This provision is to apply to the treaty now negotiated, the Chinese text of which has been carefully corrected by the English original.

British Government and Subjects not to be called "I."

ART. LI.—It is agreed that henceforward the character 夷 "I" (barbarian) shall not be applied to the government or subjects of her Britannic Majesty, in any Chinese official document issued by the Chinese authorities either in the capital or in the provinces.

Rights of British national Vessels in China.

(American, Art. IX.—French, Art. XXX.)

ART. LII.—British ships-of-war coming for no hostile purpose, or being engaged in the pursuit of pirates, shall be at liberty to visit all ports within the dominions of the Emperor of China, and shall receive every facility for the purchase of provisions, procuring water, and, if occasion require, for the making of repairs. The commanders of such ships shall hold intercourse with the Chinese authorities, on terms of equality and courtesy.

United Action to suppress Piracy.

ART. LIII.—In consideration of the injury sustained by native and foreign commerce from the prevalence of piracy in the seas of China, the high contracting parties agree to concert measures for its suppression.

British to enjoy the same Rights as others.

(American, Art. XXX.—French, Art. XL.—Russian, Art. XII.)

ART. LIV.—The British Government and its subjects are hereby confirmed in all privileges, immunities, and advantages conferred on them by previous treaties; and it is hereby expressly stipulated, that

the British Government and its subjects will be allowed free and equal participation in all privileges, immunities, and advantages that may have been, or may be hereafter, granted by his Majesty the Emperor of China to the government or subjects of any other nation.

Indemnities due for Losses to be paid by Chinese.

(French, Art. XLI.)

ART. LV.—In evidence of her desire for the continuance of a friendly understanding, her Majesty the Queen of Great Britain consents to include in a separate article, which shall be in every respect of equal validity with the articles of this treaty, the conditions affecting indemnity for expenses incurred and losses sustained in the matter of the Canton question.

Exchange of Ratifications.

(American, conclusion.—French, Art. XLII.—Russian, Art. XII.)

ART. LVI.—The ratifications of this treaty, under the hand of her Majesty the Queen of Great Britain and Ireland, and his Majesty the Emperor of China, respectively, shall be exchanged at Peking within a year from this day of signature.

In token whereof, the respective Plenipotentiaries have signed and sealed this treaty.

Done at Tientsin, this twenty-sixth day of June, in the year of our Lord one thousand eight hundred and fifty-eight; corresponding with the Chinese date, the sixteenth day, fifth moon of the eighth year of Hienfung.

(L. S.)

ELGIN AND KINCARDINE.

Signature
of First Chinese
Plenipotentiary.

Signature
of Second Chinese
Plenipotentiary.

Seal
of the Chinese
Plenipotentiaries.

CHINESE TEXT OF THE TREATY WITH GREAT BRITAIN.

Note.—The Chinese text of the English treaty is inserted for the convenience of persons wishing to refer to it when seeking the precise expressions used, or, as is often the case, desirous to let the Chinese see them. The Chinese texts of the other three treaties are not so important, and are therefore not inserted.

CHINESE TEXT OF TREATY WITH GREAT BRITAIN.

大英君主
大清皇帝
意存睦好不絕約定照各大邦和好常規亦可任意交派秉權大員分詣

一

第二款

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第一款

上諭互相較閱俱屬妥當現將會議商定條約開列於左

各將所奉全權大臣便宜行事之

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第四款

大英欽差公館眷屬隨員人等或有越禮欺藐等情弊該犯由地方官從嚴懲辦

大清官員亦宜協同勦辦僱覓夫役亦隨其意毫無阻攔待

大清皇上以昭畫一肅敬至在京師租賃地基或房屋作為大臣等員公館

大英君主每有派員前往泰西各國拜國主之禮亦拜

大清皇帝時遇有碍於國體之禮是不可行惟

大英欽差大臣作為代國秉權大員觀

諭旨遵行英國自主之邦與中國平等

大英欽差各等大員及各省屬可在京師或長行居住或能隨時往來總候奉本國

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第三款

大英

兩國京師

大清

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第七款

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第六款

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第五款

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第十款

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第九款

官毫不得刻待禁阻

天主教

原係為善之道待人如己自後凡有傳授習學者一體保護其安分無過中國

耶穌教暨

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第八款

商品觀公務應需衙署相見會晤文移均用平禮

第十四款

一英民任便覓致諸色華庶勦執分內工藝中國官毫無限制禁阻

第十三款

價照給公年定議不得互相勒指

一英國民人在各口並各地方意欲租賃地蓋屋設立棧房禮拜堂醫院墳基均按民
第十二款

已通商五口無異

聽便居住賃房買屋租地起造禮拜堂醫院墳塋等事並另有取益防損諸節悉照
州瓊州等府城口嗣後皆准英商亦可任意與無論何人買賣船貨隨時往來至於
一廣州福州廈門寧波上海五處已有江寧條約舊准通商外即在牛莊登州臺灣潮
第十一款

貨物通商之區

大清特派之大學士尙書會議准將自漢口溯流至海各地選擇不逾三口准爲英船出進
大英欽差大臣與

口通商外其餘俟地方平靖

放火焚燒房屋或搶掠者地方官立即設法派撥兵役彈壓查追並將焚搶匪徒按一英國民人中國官憲自必時加保護令其身家全安如遭欺凌擾害及有不法匪徒

第十八款

間有不能勸息者即由中國地方官與領事官會同審辦公平訊斷

先行勸息使不成訟中國民人有赴領事官告英國民人者領事官亦應一體勸息一凡英國民人控告中國民人事件應先赴領事官衙門投稟領事官即當查明根由

第十七款

懲辦兩國交涉事件彼此均須會同公平審斷以昭允當

一英國民人有犯事者皆由英國懲辦中國人欺凌擾害英民皆由中國地方官自行第十六款

一英國屬民相涉案件不論人產皆歸英官查辦

第十五款

有走私漏稅情弊查出該犯自應照例懲辦

商與船戶自議不必官爲經理亦不得限定船數並何船攬載及挑夫包攬運送倘一游行往來卸貨下貨任從英商自僱小船駁運不論各項艇隻僱價銀兩若干聽英

第二十三款

有欠中國人債務不償或潛行逃避者英國領事官亦應一體辦理

一中國人有欠英國人債務不償或潛行逃避者中國官務須認真嚴拿追繳英國人

第二十二款

官員照會領事官即行交出不得隱匿袒庇

明實係罪犯交出通商各口倘有中國犯罪人潛匿在英國船中房屋一經中國
一中國民人因犯法逃在香港或潛住英國船中者中國官照會英國官訪查嚴拿查

第二十一款

照料護送交就近領事官查收以昭睦誼

一英國船隻有在中國沿海地方碰壞擱淺或遭風收口地方官查知立即設法妥為

第二十款

辦所有追得贓物交領事官給還原主

一英國船隻在中國轄下海洋有被強盜搶劫者地方官一經聞報即應設法查追拿
第十九款

例嚴辦

第二十七款

硃批即可按照新章迅行措辦

到

有印信之後奏明請派戶部大員卽日前赴上海會同英員迅速商奪俾俟本約奉而稅餉定額不改以致原定公平稅則今已較重擬將舊則重修允定此次立約加每價百兩征稅五兩大槪核計以爲公當旋因條內載列各貨種式多有價值漸減一前在江寧立約第十條內定進出口各貨稅彼時欲綜算稅餉多寡均以價值爲率

第二十六款

一輪稅期候進口貨於起貨時出口貨於落貨時各行按納

第二十五款

免枯偏

一英商起卸貨物納稅俱照稅則爲額總不能較他國有彼免此輸之別以昭平允而

第二十四款

領事官通知中國官務須設法嚴拿果係有力能償還者務須盡數追繳秉公辦理一中國商民或到香港生理拖欠債務者由香港英官辦理惟債主逃往中國地方由

定此僅免各子口零星抽課之法海口關稅仍照例完納兩例並無交碍

兩五錢俟在上海彼此派員商酌重修稅則時亦可將各貨分別種式應納之數議海口完納給票爲他子口毫不另征之據所征若干綜算貨價爲率每百兩征銀二征收紛繁則准照行此一次之課其內地貨則在路上首經之子口輪交洋貨則在在內地買貨欲運赴口下載或在口有洋貨欲進售內地倘願一次納稅免各子口路所經處應納稅銀實數明哲照復彼此出示曉布英漢商民均得通悉惟有英商已現通商各口或在日後新開口岸限四個月爲期各領事官備文移各關監督務以地不等各子口恒設新章任其征稅名爲抽課實於貿易有損現定立約之後或在口課稅實爲若干未得確數英商每稱貨物或自某內地赴某口或自某口進某內稅關不得加重稅則只可按估價則例若干每兩加稅不過幾分等語在案迄今子前據江寧定約第十條內載各貨納稅後即准由中國商人遍運天下而路所經過

第二十八款

俟十年再行更改以後均照此限此式辦理永行弗替

月之前先行知照酌量更改若彼此未曾先期聲明更改則稅課仍照前章完納復一此次新定稅則並通商各款日後彼此兩國再欲重修以十年爲限期滿須於六個

一稅課銀兩由英商交官設銀號或紋銀或洋錢按照道光二十三年在廣東所定各

第三十三款

一通商各口分設浮樁號船塔表望樓由領事官與地方官會同酌視建造

第三十二款

例應完稅之貨則每四個月一次納鈔每噸銀一錢

一英商在各口自用艇隻運帶客人行李書信食物及例不納稅之物毋庸完鈔倘帶

第三十一款

之限即須全數輸納此外船隻出進口時並無應交費項

一英國貨船進口並未開艙欲行他往者限二日之內出口即不征收船鈔倘逾二日

第三十款

鈔以免重輸

海關監督發給專照自是日起以四個月為期如係前赴通商各口俱無庸另納船十噸以下每噸納鈔銀一錢凡船隻出口欲往通商他口並香港地方該船主稟明一英國商船應納鈔課一百五十噸以上每噸納鈔銀四錢一百五十噸正及一百五

第二十九款

單內須將所載貨物詳細開明如有漏報捏報者船主應罰銀五百兩倘係筆誤即並未報明領事官每日罰銀五十兩惟所罰之數總不能逾二百兩以外至其艙口官並將船名及押載噸數裝何貨物之處照會監督官以憑查驗如過限期該船主一英國船隻進口限一日該船主將船牌艙口單各件交領事官即於次日通知監督第三十七款

所取之數多寡懲治

需用經費由關支發惟於船主並該管船商處不得私受毫厘倘有收受查出分別一英國船隻甫臨近口監督官派委員弁丁役看守或在英船或在本艇隨便居住其第三十六款

出口

一英國船隻欲進各口聽其僱覓引水之人完清稅務之後亦可僱覓引水之人帶其

第三十五款

一秤碼丈尺均按照粵海關部頒定式由各監督在各口送交領事官以昭畫一

第三十四款

樣成色交納

邀客商二三人前來驗貨客商內有願出價銀若干買此貨者即以所出最高之價一
至稅則所載按價若干抽稅若干倘海關驗貨人役與英商不能平定其價即須各
第四十二款

口

一各船完清稅餉之後方准發給紅單領事官接到紅單始行發回船牌等件准其出
第四十一款

者即將該貨全行入官

一各船不准私行撥貨如有互相撥貨者必須先由監督官處發給准單方准動撥違
第四十款

一英商上貨下貨總須先領監督官准單如違即將貨物一並入官

第三十九款

銀五百兩並將所下貨物全行入官

一監督官接到領事官詳細照會後即發開艙單倘船主未領開艙單擅行下貨即罰
第三十八款

在遞貨單之日改正者可不罰銀

督官委員驗明實係原包原貨查與底簿相符並未拆動抽換卽照數填入牌照發
一英國民人運貨進口既經納清稅課者凡欲改運別口售賣須稟明領事官轉報監
第四十五款

未定則照按價抽稅條內之法置辦

一英國貨物如因受潮濕以致價值低減者應行按價減稅倘英商與關吏理論價值
第四十四款

公核斷明暫再爲登填

稟報遲則不爲辦理此項尙未論定之貨監督官暫緩填簿免致後難更易須俟秉
論不明英商赴領事官報知情節由領事官通知監督官商量酌辦惟必要於此日
除皮算之卽可得每箱實在勛數其餘貨物凡係有包皮者均可准此類推倘再理
出若干箱英商亦揀出若干箱先以一箱連皮過秤得若干勛再秤其皮得若干勛
核算之貨卽若茶葉一項倘海關人役與英商意見不同卽於每百箱內聽關役揀
一凡納稅實按勛兩秤計先除皮包粉飾等料以淨貨輕重爲準至有連皮過秤除皮
第四十三款

爲此貨之價式免致收稅不公

一約內所指英民罰款及船貨入官皆應歸中國收辦

第四十九款

亦可嚴行驅除不准在口貿易

一英國商船查有涉走私該貨無論式類價值全數查抄入官外俟該商船賬目清後

第四十八款

一並入官

一英商船隻獨在約內准開通商各口貿易如到別處沿海地方私做買賣即將船貨

第四十七款

杜弊端

一中國各口收稅官員凡有嚴防偷漏之法均准其相度機宜隨時便宜設法辦理以

第四十六款

餉之據至於外國所產糧食英船裝載進口未經起卸仍欲運赴他處概無禁阻
律聲稟海關監督驗明發給存票一紙他日不論進口出口之貨均可持作已納稅
免其重納稅課如查有影射夾帶情事貨罰入官至或欲將該貨運出外國亦應一
給該商收執一面行文交別口海關查照仍俟該船進口查驗符合即准開艙出售

第五十四款

大清
大英
視爲深患向於內外商民大有損得意合會議設法消除

一中華海面每有賊盜搶劫

第五十三款

地方官妥爲照料船上水師各官與中國官員平行相待

一英國師船別無他意或因捕盜駛入中國無論何口一切買取食物甜水修理船隻

第五十二款

大英國官民自不得提書夷字

一嗣後各式公文無論京外內叙

第五十一款

定約英文字詳細較對無訛亦照此例

語熟習即不用配送漢文自今以後遇有文詞辯論之處總以英文作爲正義此次
一嗣後英國文書俱用英字書寫暫時仍以漢文配送俟中國選派學生學習英文英

第五十款

大英降生後一千八百五十八年六月二十六日
大清咸豐戊午年五月十六日

大英 各大臣先蓋關防以昭信守
大清

大清京師會晤互相交付現下

御筆批准以一年爲期彼此各 派大臣於

一本約立定後俟兩國

第五十六款

立專條與約內列條同爲堅定不移

大英君主懷意恒存友睦允將前因粵城一事所致需支賠補各項經費等款如何辦理另

一

第五十五款

潤及之處英國無不同獲其美

一上年立約所有英國官民理應取益防損各事今仍存之勿失倘若他國今後別有

TREATY BETWEEN THE UNITED STATES AND CHINA.

THE United States of America and the Tá Tsing Empire, desiring to maintain firm, lasting, and sincere friendship, have resolved to renew in a manner clear and positive, by means of a treaty or general convention of peace, amity, and commerce, the rules which shall in future be mutually observed in the intercourse of their respective countries; for which most desirable object, the President of the United States and the august Sovereign of the Tá Tsing Empire have named for their plenipotentiaries, to wit:—the President of the United States of America, WILLIAM B. REED, Envoy Extraordinary and Minister Plenipotentiary to China; and his Majesty the Emperor of China, KWEILIANG, a member of the Privy Council and Superintendent of the Board of Punishments, and Hwashana, President of the Board of Civil Office, and Major-General of the bordered blue Banner Division of the Chinese Bannermen, both of them being Imperial Commissioners and Plenipotentiaries: And the said ministers, in virtue of the respective full powers they have received from their governments, have agreed upon the following articles:—

Peace to be maintained; Mediation.

(French, Art. I.—Russian, Art. I.)

ART. I.—There shall be, as there has always been, peace and friendship between the United States of America and the Tá Tsing Empire, and between their peoples respectively. They shall not insult or oppress each other for any trifling cause, so as to produce an estrangement between them; and if any other nation should act unjustly or oppressively, the United States will exert their good offices, on being informed of the case, to bring about an amicable arrangement of the question, thus showing their friendly feelings.

Custody of Treaties.

ART. II.—In order to perpetuate friendship, on the exchange of ratifications by the President with the advice and consent of the Senate of the United States, and by his Majesty the Emperor of China, this treaty shall be kept and sacredly guarded in this way, viz., the original treaty, as ratified by the President of the United States, shall be deposited at Peking, the capital of his Majesty the Emperor of China, in charge of the Privy Council; and as ratified by his Majesty the Emperor of China, shall be deposited at Washington, the capital of the United States, in charge of the Secretary of State.

Treaties to be published by both Countries.

(British Convention 1800, Art. VIII.)

ART. III.—In order that the people of the two countries may know and obey the provisions of this treaty, the United States of America agree, immediately on the exchange of ratifications, to proclaim the same and publish it by proclamation in the gazettes where the laws of the United States of America are published by authority; and his Majesty the Em-

peror of China, on the exchange of ratifications, agrees immediately to direct the publication of the same at the capital and by the governors of all the provinces.

Correspondence between the Minister and Chinese Officers.

(British, Art. V.—French, Arts II. and IV.—Russian, Art. II.)

ART. IV.—In order further to perpetuate friendship, the minister or commissioner, or the highest diplomatic representative of the United States of America in China, shall at all times have the right to correspond on terms of perfect equality and confidence with the officers of the Privy Council at the capital, or with the governors-general of the Two Kwang, the provinces of Fuhkien and Chehkiang, or of the Two Kiang; and whenever he desires to have such correspondence with the Privy Council at the capital, he shall have the right to send it through either of the said governors-general, or by the general post; and all such communications shall be sent under seal, which shall be most carefully respected. The Privy Council and governors-general, as the case may be, shall in all cases consider and acknowledge such communications promptly and respectfully.

Visit of the Minister to Peking.

(British, Art. II.—French, Art. II.—Russian, Art. II.)

ART. V.—The minister of the United States of America in China, whenever he has business, shall have the right to visit and sojourn at the capital of his Majesty the Emperor of China, and there confer with a member of the Privy Council, or any other high officer of equal rank deputed for the purpose on matters of common interest and advantage. His visits shall not exceed one in each year, and he shall complete his business without unnecessary delay.

He shall be allowed to go by land, or come to the mouth of the Peiho, into which he shall not bring ships of war, and he shall inform the authorities at that place in order that boats may be provided for him to go on his journey. He is not to take advantage of this stipulation to request visits to the capital on trivial occasions. Whenever he means to proceed to the capital, he shall communicate in writing his intention to the Board of Rites at the capital, and thereupon the said Board shall give the necessary directions to facilitate his journey, and give him necessary protection and respect on his way. On his arrival at the capital, he shall be furnished with a suitable residence prepared for him, and he shall defray his own expenses; and his entire suite shall not exceed twenty persons, exclusive of his Chinese attendants, none of whom shall be engaged in trade.

Residence of the Minister at Peking.

(British, Art. III.—French, Art. II.)

ART. VI.—If at any time his Majesty the Emperor of China shall, by treaty voluntarily made or for any other reason, permit the representative of any friendly nation to reside at his capital for a long or short time, then, without any further consultation or express permission, the representative of the United States in China shall have the same privilege.

Manner of Official Correspondence.

(British, Art. XI. of Nanking Treaty.—French, Art. IV.)

ART. VII.—The superior authorities of the United States and of China in corresponding together shall do so on terms of equality and in form of mutual communication (*cháu kwai*). The consuls and the local officers, civil and military, in corresponding together, shall likewise employ the style and form of mutual communication (*cháu kwai*). When inferior officers of the one government address superior officers of the other, they shall do so in the style and form of memorial (*shin chin*.) Private individuals in addressing superior officers shall employ the style of petition (*pin ching*). In no case shall any terms or style be used or suffered which shall be offensive or disrespectful to either party. And it is agreed that no presents, under any pretext or form whatever, shall ever be demanded of the United States by China, or of China by the United States.

Personal Official Interviews.

ART. VIII.—In all future personal intercourse between the representative of the United States of America and the governors-general or governors, the interviews shall be had at the official residence of the said officers, or at their temporary residence, or at the residence of the representative of the United States of America, whichever may be agreed upon between them; nor shall they make any pretext for declining these interviews. Current matters shall be discussed by correspondence, so as not to give the trouble of a personal meeting.

U. S. national Ships visiting Ports in China.

(British, Arts. LII. and LIII.—French, Arts. XXIX. and XXX.—Russian, Art. VI.)

ART. IX.—Whenever national vessels of the United States of America in cruising along the coast and among the ports opened for trade for the protection of the commerce of their country, or for the advancement of science shall arrive at or near any of the ports of China, the commanders of said ships and the superior local authorities of government shall, if it be necessary, hold intercourse on terms of equality and courtesy, in token of the friendly relations of their respective nations; and the said vessel shall enjoy all suitable facilities on the part of the Chinese government in procuring provisions or other supplies, and making necessary repairs. And the United States of America agree that in case of the shipwreck of any American vessel, and its being pillaged by pirates, or in case any American vessel shall be pillaged or captured by pirates on the seas adjacent to the coast, without being shipwrecked, the national vessels of the United States shall pursue the said pirates, and if captured, deliver them over for trial and punishment.

Rights of U. S. Consuls.

(British, Art. VII.—French, Art. V.—Russian Art. V.)

ART. X.—The United States of America shall have the right to appoint consuls and other commercial agents for the protection of
c.g. 5

trade, to reside at such places in the dominions of China as shall be agreed to be opened; who shall hold official intercourse and correspondence with the local officers of the Chinese government. (a consul or a vice-consul in charge taking rank with an intendant of circuit or a prefect,) either personally or in writing, as occasion may require, on terms of equality and reciprocal respect. And the consuls and local officers shall employ the style of mutual communication. If the officers of either nation are disrespectfully treated or aggrieved in any way by the other authorities, they have the right to make representation of the same to the superior officers of their respective governments, who shall see that full inquiry and strict justice shall be had in the premises. And the said consuls and agents shall carefully avoid all acts of offence to the officers and people of China. On the arrival of a consul duly accredited at any port in China, it shall be the duty of the minister of the United States to notify the same to the governor-general of the province where such port is, who shall forthwith recognize the said consul, and grant him authority to act.

Protection to Americans; Arrests.

(British, Arts XVI. and XVIII.—French, Arts XXXVI. and XXXVIII.—Russian, Art. VII.)

ART. XI.—All citizens of the United States of America in China, peaceably attending to their affairs, being placed on a common footing of amity and good-will with subjects of China, shall receive and enjoy for themselves and everything appertaining to them, the protection of the local authorities of government, who shall defend them from all insult or injury of any sort. If their dwellings or property be threatened or attacked by mobs, incendiaries, or other violent or lawless persons, the local officers, on requisition of the consul, shall immediately dispatch a military force to disperse the rioters, apprehend the guilty individuals, and punish them with the utmost rigour of the law. Subjects of China guilty of any criminal act towards citizens of the United States shall be punished by the Chinese authorities according to the laws of China; and citizens of the United States, either on shore or in any merchant vessel, who may insult, trouble, or wound the persons or injure the property of Chinese, or commit any other improper act in China, shall be punished only by the consul or other public functionary thereto authorized, according to the laws of the United States. Arrests in order to trial may be made by either the Chinese or the United States' authorities.

Renting Houses, Travel, and Trade near Ports.

(British, Arts IX., XI., and XII.—French, Arts VIII. and X.—Russian, Art. V.)

ART. XII.—Citizens of the United States, residing or sojourning at any of the ports open to foreign commerce, shall be permitted to rent houses and places of business, or hire sites on which they can themselves build houses or hospitals, churches, and cemeteries. The parties interested can fix the rent by mutual and equitable agreement; the proprietors shall not demand an exorbitant price, nor shall the local authorities interfere, unless there be some objections offered on the

part of the inhabitants respecting the place. The legal fees to the officers for applying their seal shall be paid. The citizens of the United States shall not unreasonably insist on particular spots, but each party shall conduct with justice and moderation. Any desecration of the cemeteries by natives of China shall be severely punished according to law. At the places where the ships of the United States anchor, or their citizens reside, the merchants, seamen, or others can freely pass and repass in the immediate neighbourhood; but, in order to the preservation of the public peace, they shall not go into the country to the villages and marts to sell their goods unlawfully, in fraud of the revenue.

Shipwrecks; Property saved to be restored; Pirates.

(British, Arts. XIX. and XX.—French, Arts. XXX. and XXXIV.—Russian, Art. VI.)

ART. XIII.—If any vessel of the United States be wrecked or stranded on the coast of China, and be subjected to plunder or other damage, the proper officers of the government, on receiving information of the fact, shall immediately adopt measures for its relief and security; the persons on board shall receive friendly treatment, and be enabled to repair at once to the nearest port, and shall enjoy all facilities for obtaining supplies of provisions and water. If the merchant vessels of the United States, while within the waters over which the Chinese government exercises jurisdiction, be plundered by robbers or pirates, then the Chinese local authorities, civil and military, on receiving information thereof, shall arrest the said robbers or pirates, and punish them according to law, and shall cause all the property which can be recovered to be restored to the owners or placed in the hands of the consul. If by reason of the extent of territory and numerous population of China, it shall in any case happen that the robbers cannot be apprehended, and the property only in part recovered, the Chinese government shall not make indemnity for the goods lost; but if it shall be proved that the local authorities have been in collusion with the robbers, the same shall be communicated to the superior authorities for memorializing the Throne, and these officers shall be severely punished, and their property be confiscated to repay the losses.

Seven open Ports for American Trade.

(British, Arts. XI. and XLVII.—French, Arts. VI., VII., and XXVIII.—Russian, Art. III.)

ART. XIV.—The citizens of the United States are permitted to frequent the ports and cities of Canton and Cháu-chau or Swatau, in the province of Kwangtung; Amoy, Fuhchau, and Taiwan in Formosa, in the province of Fuhkien; Ningpo, in the province of Chehkiang; and Shanghai, in the province of Kiangsu; and any other port or place hereafter by treaty with other powers, or with the United States, opened to commerce; and to reside with their families and trade there, and to proceed at pleasure with their vessels and merchandise from any of these ports to any other of them. But said vessels shall not carry on a clandestine and fraudulent trade at other ports of China not declared to be legal, or along the coasts thereof; and any vessel under the

American flag violating this provision shall, with her cargo, be subject to confiscation to the Chinese government; and any citizen of the United States who shall trade in any contraband article of merchandise shall be subject to be dealt with by the Chinese government, without being entitled to any countenance or protection from that of the United States; and the United States will take measures to prevent their flag from being abused by the subjects of other nations as a cover for the violation of the laws of the empire.

Duties to be paid.

(British, Arts. XXVI. and XXVIII.—French, Art. XXVII.)

ART. XV.—At each of the ports open to commerce, citizens of the United States shall be permitted to import from abroad, and sell, purchase, and export, all merchandise of which the importation or exportation is not prohibited by the laws of the empire. The tariff of duties to be paid by citizens of the United States, on the export and import of goods from and into China, shall be the same as was agreed upon at the treaty of Wángghíá, except so far as it may be modified by treaties with other nations; it being expressly agreed that citizens of the United States shall never pay higher duties than those paid by the most favoured nation.

Tonnage Duties, Buoys, Light-ships.

(British, Arts. XXIX., XXXI., and XXXII.—French, Art. XXII.)

ART. XVI.—Tonnage duties shall be paid on every merchant vessel belonging to the United States entering either of the open ports, at the rate of four mace per ton of forty cubic feet, if she be over one hundred and fifty tons burden; and one mace per ton of forty cubic feet, if she be of the burden of one hundred and fifty tons or under, according to the tonnage specified in the register; which, with her other papers, shall, on her arrival, be lodged with the consul, who shall report the same to the commissioner of customs. And if any vessel, having paid tonnage duty at one port, shall go to any other port to complete the disposal of her cargo, or being in ballast, to purchase an entire or fill up an incomplete cargo, the consul shall report the same to the commissioner of customs, who shall note on the port-clearance that the tonnage duties have been paid, and report the circumstances to the collectors at the other custom-houses; in which case, the said vessel shall only pay duty on her cargo, and not be charged with tonnage duty a second time. The collectors of customs at the open ports shall consult with the consuls about the erection of beacons or light-houses, and where buoys and light-ships should be placed.

Hiring Pilots, Labourers, Boats, &c.

(British, Arts. XIII., XIV., and XXV.—French, Arts. XI., XV., and XVIII.)

ART. XVII.—Citizens of the United States shall be allowed to engage pilots to take their vessels into port, and when the lawful duties have all been paid, take them out of port. It shall be lawful for them to hire at pleasure, servants, compradores, linguists, writers, labourers, seamen, and persons for whatever necessary service, with passage or

cargo-boats, for a reasonable compensation, to be agreed upon by the parties or determined by the consul.

Deserters and Criminals to be tried by their own Officers.

(British, Arts. XVI., XXI., and XXXVI.—French, Arts. XVI., and XXXII.)

ART. XVIII.—Whenever merchant vessels of the United States shall enter a port, the collector of customs shall, if he see fit, appoint custom-house officers to guard said vessel, who may live on board the ship or their own boats, at their convenience. The local authorities of the Chinese government shall cause to be apprehended all mutineers or deserters from on board the vessels of the United States in China on being informed by the consul, and will deliver them up to the consuls or other officers for punishment. And if criminals, subjects of China, take refuge in the houses or on board the vessels of citizens of the United States, they shall not be harboured or concealed, but shall be delivered up to justice on due requisition by the Chinese local officers, addressed to those of the United States. But merchants, seamen, and other citizens of the United States shall be under the superintendence of the appropriate officers of their government. If individuals of either nation commit acts of violence or disorder, use arms to the injury of others, or create disturbances endangering life, the officers of the two governments will exert themselves to enforce order and to maintain the public peace, by doing impartial justice in the premises.

Rules about Cargo and reporting Ships.

(British, Arts. XXX., XXXVII., XXXVIII., and XXXIX.—French, Arts. V., XVII., XIX., XX., and XXIV.)

ART. XIX.—Whenever a merchant vessel belonging to the United States shall cast anchor in either of the said ports, the supercargo, master, or consignee shall, within forty-eight hours, deposit the ship's papers in the hands of the consul or person charged with his functions, who shall cause to be communicated to the superintendent of customs a true report of the name and tonnage of such vessel, the number of her crew, and the nature of her cargo, which being done, he shall give a permit for her discharge. And the master, supercargo, or consignee, if he proceed to discharge the cargo without such permit, shall incur a fine of five hundred dollars, and the goods so discharged without permit shall be subject to forfeiture to the Chinese government. But if a master of any vessel in port desire to discharge a part only of the cargo, it shall be lawful for him to do so, paying duty on such part only, and to proceed with the remainder to any other ports. Or if the master so desire, he may, within forty-eight hours after the arrival of the vessel, but not later, decide to depart without breaking bulk; in which case he shall not be subject to pay tonnage or other duties or charges until, on his arrival at another port, he shall proceed to discharge cargo, when he shall pay the duties on vessel and cargo, according to law. And the tonnage duties shall be held due after the expiration of the said forty-eight hours. In case of the absence of the consul or person charged with his functions, the captain or supercargo of the vessel may have recourse to the consul of a friendly power; or, if he please, directly to the superintendent of customs, who shall do all that is required to conduct the ship's business.

Examination of or Disputes about Cargo.

(British, Arts. XLII., XLIII., and XLIV.—French, Art. XIX.)

ART. XX.—The superintendent of customs, in order to the collection of the proper duties, shall, on application made to him through the consul, appoint suitable officers, who shall proceed in the presence of the captain, supercargo, or consignee, to make a just and fair examination of all goods in the act of being discharged for importation, or laden for exportation, on board any merchant vessel of the United States. And if disputes occur in regard to the value of goods subject to ad-valorem duty, or in regard to the amount of tare, and the same cannot be satisfactorily arranged by the parties, the question may within twenty-four hours, and not afterwards, be referred to the said consul to adjust with the superintendent of customs.

Imports sent from one Port to another.

(British, Art. XLV.—French, Art. XXIV.)

ART. XXI.—Citizens of the United States, who may have imported merchandise into any of the free ports of China, and paid the duty thereon, if they desire to re-export the same in part or in whole to any other of the said ports, shall be entitled to make application through their consul, to the superintendent of customs, who, in order to prevent fraud on the revenue, shall cause examination to be made by suitable officers to see that the duties paid on such goods as are entered on the custom-house books, correspond with the representation made, and that the goods remain with their original marks unchanged, and shall then make a memorandum in the port-clearance, of the goods and the amount of duties paid on the same, and deliver the same to the merchant, and shall also certify the facts to the officers of customs of the other ports; all which being done, on the arrival in port of the vessel in which the goods are laden, and everything being found on examination there to correspond, she shall be permitted to break bulk and land the said goods, without being subject to the payment of additional duty thereon. But if, on such examination, the superintendent of customs shall detect any fraud on the revenue in the case, then the goods shall be subject to forfeiture and confiscation to the Chinese government. Foreign grain or rice brought into any port of China in a ship of the United States and not landed, may be re-exported without hindrance.

Payment of Duties ; Consul liable.

(British, Arts. XXV., XXXIII. and XLI.—French, Art. XXI.)

ART. XXII.—The tonnage duty on vessels of the United States shall be paid on their being admitted to entry. Duties of import shall be paid on the discharge of the goods, and duties of export on the lading of the same. When all such duties shall have been paid, and not before, the collector of customs shall give a port-clearance, and the consul shall return the ship's papers. The duties shall be paid to the shroffs authorized by the Chinese government to receive the same. Duties shall be paid and received either in sycee silver or in foreign money at the rate of the day. If the consul permits a ship to leave the port before the duties and tonnage dues are paid, he shall be held responsible therefor.

Permits granted for Transhipment of Goods.

(British, Art. XL.—French, Art. XXV.)

ART. XXIII.—When goods on board any merchant vessel of the United States in port require to be transhipped to another vessel, application shall be made to the consul, who shall certify what is the occasion therefor to the superintendent of customs, who may appoint officers to examine into the facts and permit the transhipment. And if any goods be transhipped without written permits, they shall be subject to be forfeited to the Chinese government.

Manner of Prosecution of Debts.

(British, Arts. XXII and XXIII.—French, Art. XXXVII.)

ART. XXIV.—When there are debts due by subjects of China to citizens of the United States, the latter may seek redress in law; and on suitable representations being made to the local authorities, through the consul, they will cause due examination in the premises, and take proper steps to compel satisfaction. And if citizens of the United States be indebted to subjects of China, the latter may seek redress by representation through the consul, or by suit in the consular court. But neither government will hold itself responsible for such debts.

Facilities for learning the Chinese Language.

(French, Art. XI.)

ART. XXV.—It shall be lawful for the officers or citizens of the United States to employ scholars and people of any part of China, without distinction of persons, to teach any of the languages of the empire, and to assist in literary labours; and the persons so employed shall not for that cause be subject to any injury on the part either of the government or of individuals; and it shall in like manner be lawful for citizens of the United States to purchase all manner of books in China.

Rights of American Neutrals in War.

(French, Art. XXXI.)

ART. XXVI.—Relations of peace and amity between the United States and China being established by this treaty, and the vessels of the United States being admitted to trade freely to and from the ports of China open to foreign commerce, it is further agreed that, in case at any time hereafter China shall be at war with any foreign nation whatever, and should for that cause exclude such nation from entering her ports, still the vessels of the United States shall not the less continue to pursue their commerce in freedom and security, and to transport goods to and from the ports of the belligerent powers, full respect being paid to the neutrality of the flag of the United States, provided that the said flag shall not protect vessels engaged in the transportation of officers or soldiers in the enemy's service, nor shall said flag be fraudulently used to enable the enemy's ships with their cargoes, to enter the ports of China; but all such vessels so offending shall be subject to forfeiture and confiscation to the Chinese government.

Chinese Officers have no Jurisdiction in Disputes.

(British, Arts. XV., and XVI.—French, Arts. XXXIX, and XXXVIII.)

ART. XXVII.—All questions in regard to rights, whether of property or person, arising between citizens of the United States in China, shall be subject to the jurisdiction and regulated by the authorities of their own government. And all controversies occurring in China between citizens of the United States and the subjects of any other government, shall be regulated by the treaties existing between the United States and such governments, respectively, without interference on the part of China.

Modes of U. S. Citizens addressing Chinese Officers.

(British, Art. XVII.—French, Art. XXXV.)

ART. XXVIII.—If citizens of the United States have special occasion to address any communication to the Chinese local officers of government, they shall submit the same to their consul or other officer, to determine if the language be proper and respectful, and the matter just and right, in which event he shall transmit the same to the appropriate authorities for their consideration and action in the premises. If subjects of China have occasion to address the consul of the United States, they may address him directly, at the same time they inform their own officers, representing the case for his consideration and action in the premises; and if controversies arise between citizens of the United States and subjects of China, which cannot be amicably settled otherwise, the same shall be examined and decided conformably to justice and equity by the public officers of the two nations, acting in conjunction. The extortion of illegal fees is expressly prohibited. Any peaceable persons are allowed to enter the court in order to interpret, lest injustice be done.

Toleration of the Christian Religion.

(British, Art. VIII.—French, Art. XIII, and Convention, Art. VI.—Russian, Art. VIII.)

ART. XXIX.—The principles of the Christian religion, as professed by the Protestant and Roman Catholic churches, are recognized as teaching men to do good, and to do to others as they would have others do to them. Hereafter, those who quietly profess and teach these doctrines shall not be harassed or persecuted on account of their faith. Any person, whether citizen of the United States or Chinese convert, who according to these tenets peaceably teach and practice the principles of Christianity, shall in no case be interfered with or molested.

American Citizens to enjoy the same Privileges as others.

(British, Art. LIV.—French, Art. XL.—Russian, Art. XII.)

ART. XXX.—The contracting parties hereby agree that, should at any time the Tá Tsing Empire grant to any nation, or the merchants or citizens of any nation, any right, privilege or favour, connected either with navigation, commerce, political, or other intercourse, which is not conferred by this treaty, such right, privilege, and favour shall at once freely enure to the benefit of the United States, its public officers, merchants, and citizens.

Time of Exchange of Ratifications.

(British, Art. LVI.—French, Art. XLII.—Russian, Art. XII.)

The present treaty of peace, amity, and commerce shall be ratified by the President of the United States, by and with the advice and consent of the Senate, within one year, or sooner if possible, and by the august Sovereign of the Tâ Tsing Empire forthwith; and the ratifications shall be exchanged within one year from the date of the signatures thereof.

In faith whereof, we, the respective plenipotentiaries of the United States of America and of the Tâ Tsing Empire, as aforesaid, have signed and sealed these presents.

Done at Tientsin, this eighteenth day of June, in the year of our Lord one thousand eight hundred and fifty-eight, and the Independence of the United States of America the eighty-second, and in the eighth year of Hienfung, fifth month, and eighth day.

WILLIAM B. REED.

KWEILIANG, [in Chinese characters.]

HWASHANA,

[do.]

[L. S.]

[L. S.]

[L. S.]

**TREATY OF PEACE, FRIENDSHIP, COMMERCE, AND
NAVIGATION, BETWEEN FRANCE AND CHINA.**

SIGNED AT TIENTSIN, JUNE 27, 1858.

SA Majesté l'Empereur des Français, et sa Majesté l'Empereur de la Chine, animés l'un et l'autre du désir de mettre un terme aux différends qui se sont élevés entre les deux empires, et voulant rétablir et améliorer les relations d'amitié, de commerce, et de navigation qui ont existé entre les deux puissances, comme aussi en régulariser l'existence, en favoriser le développement, et en perpétuer la durée, ont résolu de conclure un nouveau traité basé sur l'intérêt commun des deux pays, et ont en conséquence nommé pour leurs plenipotentiaries, savoir :

SA Majesté l'Empereur des Français, le SIEUR JEAN BAPTISTE LOUIS BARON GROS, Grand Officier de la Légion d'Honneur, Grand-Croix de l'Ordre du Sauveur de Grèce, Commandeur de l'Ordre de la Conception de Portugal, &c., &c., &c. ;

Et sa Majesté l'Empereur de la Chine, KOUEI-LIANG, Haut Commissaire Impérial de la Dynastie Tâ Tsing, Grand Ministre du Palais Oriental, Directeur-Général du Conseil de Justice, &c., &c., &c. ; et HOUA-CHA-NA, Haut Commissaire Impérial de la Dynastie Tâ Tsing, Président du Conseil des Finances, Général de l'Armée Sino-Tartare, de la Bannière à bord d'azur, &c., &c., &c. ;

Lesquels, après avoir échangé leurs pleins pouvoirs, qu'ils ont trouvés en bonne et due forme, sont convenus des articles suivants :—

Mutual Peace and Protection guaranteed.

(American, Art. I.—Russian, Art. I.)

ARTICLE I.—Il y aura paix constante et amitié perpétuelle entre sa Majesté l'Empereur des Français et sa Majesté l'Empereur de la Chine, ainsi qu'entre les sujets des deux empires sans exception de personnes ni de lieux. Ils jouiront tous également des mêmes droits et des mêmes protections dans les états respectifs des hautes parties contractantes d'une pleine et entière protection pour leurs personnes et leurs propriétés.

Interchange and Privileges of Diplomatic Agents.

(British, Arts. III., IV., and VI.—American, Arts. IV. and VI.—Russian, Art. II.)

ARTICLE II.—Pour maintenir la paix si heureusement rétablie entre les deux empires, il a été convenu entre les hautes parties contractantes qu'à l'exemple de ce qui se pratique chez les nations de l'Occident, les agents diplomatiques dûment accrédités par sa Majesté l'Empereur des Français auprès de sa Majesté l'Empereur de la Chine pourront se rendre éventuellement dans la capitale de l'empire lorsque des affaires importantes les y appelleront. Il est convenu entre les hautes parties contractantes que si l'une des puissances qui ont un traité avec la Chine, obtenait pour ses agents diplomatiques le droit de résider à poste fixe à P'king, la France jouirait immédiatement du droit dont il est parlé ci-dessus.

Les agents diplomatiques jouiront réciproquement, dans le lieu de leur résidence, des privilèges et immunités que leur accorde le droit des gens, — c'est-à-dire, que leurs personnes, leurs familles, leurs maisons, et leur correspondance seront inviolables ; qu'ils pourront prendre à leur service les employés, courriers, interprètes, serviteurs, &c., &c., qui leur seront nécessaires.

Les dépenses de toute espèce qu'occasionneront les missions diplomatiques de France en Chine seront supportées par le gouvernement Français. Les agents diplomatiques qu'il plaira à sa Majesté l'Empereur de la Chine d'accréditer auprès de sa Majesté l'Empereur des Français seront reçus en France avec tous les honneurs et toutes les prérogatives dont jouissent, à rang égal, les agents diplomatiques des autres nations accrédités à la Cour de sa Majesté l'Empereur des Français.

Language of Official Correspondence.

(British, Art. I.)

ARTICLE III.—Les communications officielles des agents diplomatiques et consulaires Français avec les autorités Chinoises seront écrites en Français, mais seront accompagnées, pour faciliter le service, d'une traduction Chinoise aussi exacte que possible, jusqu'au moment où le gouvernement impérial de Péking ayant des interprètes pour parler et écrire correctement le Français, la correspondance diplomatique aura lieu dans cette langue pour les agents Français, et en Chinois pour les fonctionnaires de l'empire. Il est convenu que jusque là et en cas de dissidence dans l'interprétation à donner au texte Français et au texte Chinois au sujet des clauses arrêtées d'avance dans les conventions faites de commun accord, ce sera toujours le texte original et non la traduction

qui fera foi. Cette disposition est applicable au présent traité, et dans les communications entre les autorités des deux pays ce sera toujours le texte original et non la traduction qui fera foi.

Style of Official Correspondence; Reclamations of Private Persons.

(British, Art. XVII.—American, Arts. VII and XXVIII.)

ARTICLE IV.—Désormais les correspondances officielles entre les autorités et les fonctionnaires des deux pays seront réglées suivant les rangs et les positions respectives, et d'après les bases de la réciprocité la plus absolue. Ces correspondances auront lieu entre les hauts fonctionnaires Français et les hauts fonctionnaires Chinois dans la capitale ou ailleurs, par dépêche ou communication; entre les fonctionnaires Français en sous ordre et les hautes autorités des provinces, pour les premiers par exposé (), pour les seconds par déclaration ().

Entre les officiers en sous ordre des deux nations, comme il est dit plus haut, sur le pied d'une parfaite égalité.

Les négociants, et généralement tous les individus qui n'ont pas de caractère officiel, se serviront réciproquement de la formule représentation () dans toutes les pièces adressées ou destinées pour renseignements aux autorités respectives.

Toutes les fois qu'un Français aura à recourir à l'autorité Chinoise, sa représentation devra d'abord être soumise au consul, qui, si elle lui paraît raisonnable et convenablement rédigée, lui donnera suite, et qui, s'il en est autrement, en fera modifier la teneur ou refusera de la transmettre. Les Chinois, de leur côté, lorsqu'ils auront à s'adresser au consulat, devront suivre une marche analogue auprès de l'autorité Chinoise, laquelle agira de la même manière.

French Consuls to reside at Open Ports; their relative Ranks.

(British, Art. VII.—American, Art. X.—Russian, Arts. II and V.)

ARTICLE V.—Sa Majesté l'Empereur des Français pourra nommer des consuls ou des agents consulaires dans les ports de mer ou de rivière de l'empire Chinois, dénommés dans l'Article VI. du présent traité, pour servir d'intermédiaire entre les autorités Chinoises et les négociants et les sujets Français, et veiller à la stricte observation des règlements stipulés. Ces fonctionnaires seront traités avec la considération et les égards qui leur sont dûs. Leurs rapports avec les autorités du lieu de leur résidence seront établis sur le pied de la plus parfaite égalité. S'ils avaient à se plaindre des procédés de la dite autorité, ils s'adresseraient directement à l'autorité supérieure de la province, et en donneraient immédiatement avis au ministre plénipotentiaire de l'Empereur.

En cas d'absence du consul Français, les capitaines et les négociants Français auraient la faculté de recourir à l'intervention du consul d'une puissance amie; ou, s'il était impossible de le faire, ils auraient recours au chef de la douane, qui aviserait au moyen d'assurer à ces capitaines et négociants le bénéfice du présent traité.

Ports in China open to French Commerce.

(British, Art. XI.—American, Art. XIV.—Russian, Art. III.)

ARTICLE VI.—L'expérience ayant démontré que l'ouverture de

nouveaux ports au commerce étranger est une des nécessités de l'époque, il a été convenu que les ports de Kioung-tchaou et Tchaou-tchaou, dans la province de Kouangton ; Taïvan et Tanshwi, dans l'île de Formose (province de Fo-kien) ; Tan-tchao, dans la province de Shang-tong ; et Nankin, dans la province de Kiang-nan, jouiront des mêmes privilèges que Canton, Shang-hae, Ning-po, Amoy, et Fou toheou. Quant à Nankin, les agents Français en Chine ne délivreront de passeports à leurs nationaux pour cette ville que lorsque les rebelles en auront été expulsés par les troupes Impériales.

French Subjects to reside at Open Ports, and forbidden to trade elsewhere.

(British, Arts. XLVII and XLVIII.—American, Art. XIV.)

ARTICLE VII.—Les Français et leurs familles pourront se transporter, s'établir, et se livrer au commerce ou à leur industrie en toute sécurité, et sans entrave d'aucune espèce dans les ports et villes de l'empire Chinois situés sur les côtes maritimes et sur les grands fleuves dont l'énumération est contenue dans l'article précédent.

Ils pourront circuler librement de l'un à l'autre s'ils sont munis de passeports ; mais, il leur est formellement défendu de pratiquer sur la côte des ventes ou des achats clandestins, sous peine de confiscation des navires et des marchandises engagées dans ces opérations ; et cette confiscation aura lieu au profit du gouvernement Chinois, qui devra cependant, avant que la saisie et la confiscation ne soient légalement prononcées en donner avis au consul Français du port le plus voisin.

Travel in the Interior with Passports.

(British, Art. IX.)

ARTICLE VIII.—Les Français qui voudront se rendre dans les villes de l'intérieur ou dans les ports où ne sont pas admis les navires étrangers, pourront le faire en toute sûreté, à la condition expresse d'être munis de passeports rédigés en Français et en Chinois, légalement délivrés par les agents diplomatiques ou les consuls de France en Chine, et visés par les autorités Chinoises.

En cas de perte de ce passeport, le Français qui ne pourra pas le présenter lorsqu'il en sera requis légalement, devra, si l'autorité Chinoise du lieu où il se trouve se refuse à lui donner un permis de séjour pour lui laisser le temps de demander un autre passeport au consul, être reconduit au consulat le plus voisin, sans qu'il soit permis de le maltraiter ni de l'insulter en aucune manière.

Ainsi que cela était stipulé dans les anciens traités, les Français résidant ou de passage dans les ports ouverts au commerce étranger pourront circuler sans passeports dans leur voisinage immédiat, et y vaquer à leurs occupation aussi librement que les nationaux ; mais ils ne pourront dépasser certaines limites qui seront fixées de commun accord entre le consul et l'autorité locale. Les agents Français en Chine ne délivreront de passeports à leurs nationaux que pour les lieux où les rebelles ne seront pas établis dans le moment où le passeport sera demandé.

Ces passeports ne seront délivrés par les autorités Françaises qu'aux personnes qui leur offriront toutes les garanties désirables.

All Changes in Tariff and Trade to enure to French Subjects.

(American, Art. XV.)

ARTICLE IX.—Tous les changements apportés d'un commun accord, avec l'une des puissances signataires des traités avec la Chine, au sujet des améliorations à introduire au tarif actuellement en vigueur, ou à celui qui le serait plus tard, comme aussi aux droits de douane, de tonnage, d'importation, de transit, et d'exportation, seront immédiatement applicables au commerce et aux négociants Français par le seul fait de leur mise à exécution.

Privileges in getting Land, Building, and Cemeteries.

(British, Arts. XI. and XII.—American, Art. XII.)

ARTICLE X.—Tout Français qui, conformément aux stipulations de l'Article VI. du présent traité, arrivera dans l'un des ports ouverts au commerce étranger pourra, quelle que soit la durée de son séjour, y louer des maisons et des magasins pour déposer ses marchandises, ou bien affermer des terrains et y bâtir lui-même des maisons et des magasins. Les Français pourront, de la même manière, établir des églises, des hôpitaux, des hospices, des écoles, et des cimetières. Dans ce but l'autorité locale, après s'être concertée avec le consul, désignera les quartiers les plus convenables pour la résidence des Français et les endroits dans lesquels pourront avoir lieu les constructions précitées.

Le prix des loyers et des fermages sera librement débattu entre les parties intéressées, et réglé, autant que faire se pourra, conformément à la moyenne des prix locaux.

Les autorités Chinoises empêcheront leurs nationaux de surfaire ou d'exiger des prix exorbitants, et le consul veillera, de son côté, à ce que les Français n'usent pas de violence ou de contrainte pour forcer le consentement de propriétaires. Il est bien entendu d'ailleurs que le nombre des maisons et l'étendue des terrains à affecter aux Français dans les ports ouverts au commerce étranger ne seront point limités, et qu'ils seront déterminés d'après les besoins et les convenances des ayants-droit. Si des Chinois violaient ou détruiraient des églises ou des cimetières Français, les coupables seraient punis suivant toute la rigueur des lois du pays.

Frenchmen can employ Chinese, and learn their Language.

(British, Arts. XII, XIII, and XIV.—American, Arts. XVII. and XXV.)

ARTICLE XI.—Les Français, dans les ports ouverts au commerce étranger, pourront choisir librement, et à prix débattu entre les parties ou sous la seule intervention des consuls, des compradors, interprètes, écrivains, ouvriers, bateliers, et domestiques. Ils auront en outre la faculté d'engager des lettrés du pays pour apprendre à parler ou à écrire la langue Chinoise et toute autre langue ou dialecte usité dans l'Empire, comme aussi de se faire aider par eux, soit pour leurs écrivains, soit pour des travaux scientifiques ou littéraires. Ils pourront également enseigner à tout sujet Chinois la langue de leur pays ou des langues étrangères, et vendre sans obstacle des livres Français, ou acheter eux-mêmes toutes sortes de livres Chinois.

Rights of French Subjects and Vessels in China.

(British, Art. XV.—American, Art. XXVII.)

ARTICLE XII.—Les propriétés de toute nature appartenant à des Français dans l'empire Chinois seront considérées par les Chinois comme inviolables, et seront toujours respectées par eux. Les autorités Chinoises ne pourront, quoiqu'il arrive, mettre embargo sur les navires Français ni les frapper de réquisition, pour quelque service, public ou privé, que ce puisse être.

Toleration of the Christian Religion.

(British, Art. VIII.—American, Art. XXIX.—Russian, Art. VIII.)

ARTICLE XIII.—La religion Chrétienne ayant pour objet essentiel de porter les hommes à la vertu, les membres de toutes communions Chrétiennes jouiront d'une entière sécurité pour leurs personnes, leurs propriétés, et le libre exercice de leurs pratiques religieuses, et une protection efficace sera donnée aux missionnaires qui se rendront pacifiquement dans l'intérieur de pays, munis des passeports réguliers dont il est parlé dans l'Article VIII.

Aucune entrave ne sera apportée par les autorités de l'empire Chinois au droit qui est reconnu à tout individu en Chine d'embrasser, s'il le veut, le Christianisme et d'en suivre les pratiques sans être passible d'aucune peine infligée pour ce fait.

Tout ce qui a été précédemment écrit, proclamé ou publié en Chine par ordre du gouvernement contre le culte Chrétien, est complètement abrogé, et reste sans valeur dans toutes les provinces de l'empire.

No Monopoly or Coalition allowed in Trade.

(British Nanking Treaty, Art. V.)

ARTICLE XIV.—Aucune société de commerce privilégié ne pourra désormais s'établir en Chine, et il en sera de même de toute coalition organisée dans le but d'exercer un monopole sur le commerce. En cas contravention au présent article, les autorités Chinoises, sur les représentations du consul ou de l'agent consulaire, aviseront aux moyens de dissoudre de semblables associations, dont elles s'efforceront d'ailleurs de prévenir l'existence par des prohibitions préalables, afin d'écarter tout ce qui pourrait porter atteinte à la libre concurrence.

Compensation, Qualification, and Rules for Pilots.

(British, Art. XXXV.—American, Art. XVII.)

ARTICLE XV.—Lorsqu'un bâtiment Français arrivera dans les eaux de l'un des ports ouverts au commerce étranger, il aura la faculté d'engager tel pilote qui lui conviendra pour se faire conduire immédiatement dans le port, et de même, quand après avoir acquitté toutes les charges légales, il sera prêt à mettre à la voile, on ne pourra pas lui refuser des pilotes pour le sortir du port sans retard ni délai.

Tout individu qui voudra exercer la profession de pilote pour les bâtiments Français, pourra, sur la présentation de trois certificats de capitaines de navires, être commissionné par le consul de France de la même manière que cela se pratiquerait pour d'autres nations.

La rétribution payée aux pilotes sera réglée selon l'équité pour chaque port en particulier, par le consul ou agent consulaire, lequel la fixera convenablement en raison de la distance et des circonstances de la navigation.

Custom-house Officers to be near or on board Ships.

(British, Art. XXXVI.—American, Art. XVIII.)

ARTICLE XVI.—Dès que le pilote aura introduit un navire de commerce Français dans le port, le chef de la douane déléguera un ou deux préposés pour surveiller le navire et empêcher qu'il ne se pratique aucune fraude. Ces préposés pourront, selon leurs convenances, rester dans leur propre bateau ou se tenir à bord du bâtiment.

Les frais de leur solde, de leur nourriture, et de leur entretien, seront à la charge de la douane Chinoise, et ils ne pourront exiger aucune indemnité ou rétribution quelconque des capitaines ou consignataires. Toute contravention à cette disposition entraînera une punition proportionnelle au montant de l'exaction, laquelle sera, en outre, intégralement restituée.

Time and Manner of reporting Ships to the Customs.

(American, Art. XIX.—British, Arts. XXXVII. and XXXVIII.)

ARTICLE XVII.—Dans les vingt-quatre heures qui suivront l'arrivée d'un navire de commerce Français dans l'un des ports ouverts au commerce étranger, le capitaine, s'il n'est dûment empêché, et à son défaut le subrécargue ou le consignataire, devra se rendre au consulat de France et remettre entre les mains du consul les papiers de bord, les connaissements, et le manifeste. Dans les vingt-quatre heures suivantes le consul enverra au chef de la douane une note détaillée indiquant le nom du navire, le rôle d'équipage, le tonnage légal du bâtiment, et la nature de son chargement ; si, par suite de la négligence du capitaine, cette dernière formalité n'avait pas pu être accomplie dans les quarante-huit heures qui suivront l'arrivée du navire, le capitaine sera passible d'une amende de 50 piastres par jour de retard, au profit du gouvernement Chinois ; la dite amende toutefois ne pourra dépasser la somme de 200 piastres.

Aussitôt après la réception de la note transmise par le consulat, le chef de la douane délivrera le permis d'ouvrir la cale. Si le capitaine, avant d'avoir reçu le permis précité, avait ouvert sa cale et commencé à décharger, il pourra être condamné à une amende de 500 piastres, et les marchandises débarquées pourront être saisies, le tout au profit du gouvernement Chinois.

Hiring Boats and Porters to be free.

(American, Art. XVII.—British, Art. XIV.)

ARTICLE XVIII.—Les capitaines et négociants Français pourront louer telle espèce d'allèges et d'embarcation qu'il leur plaira pour transporter des marchandises et des passagers, et la rétribution à payer pour ces allèges sera réglée de gré à gré par les parties intéressées, sans l'intervention de l'autorité Chinoise, et, par conséquent, sans sa garantie en cas d'accident, de fraude, ou de disparition des dites allèges. Le nombre

n'en sera pas limité et le monopole n'en pourra être concédé à qui que ce soit, non plus que celui du transport par portefaix des marchandises à embarquer ou à débarquer.

Rules for loading Ships, paying Duties, and settling Disputes about Cargo.

(British, Arts XLII, XLIII and XLIV.—American, Arts XIX and XX.)

ARTICLE XIX.—Toutes les fois qu'un négociant Français aura des marchandises à embarquer ou à débarquer, il devra d'abord en remettre la note détaillée au consul ou agent consulaire, qui chargera immédiatement un interprète reconnu du consulat d'en donner communication au chef de la douane. Celui-ci délivrera sur le champ un permis d'embarquement ou de débarquement. Il sera alors procédé à la vérification des marchandises dans la forme la plus convenable pour qu'il n'y ait chance de perte pour aucune des parties.

Le négociant Français devra se faire représenter sur le lieu de la vérification (s'il ne préfère y assister lui-même) par une personne réunissant les qualités requises à l'effet de veiller à ses intérêts au moment où il sera procédé à cette vérification pour la liquidation des droits, faute de quoi toute réclamation ultérieure restera nulle et non avenue.

En ce qui concerne les marchandises taxées *ad valorem*, si le négociant ne peut tomber d'accord avec l'employé Chinois sur la valeur, à fixer, chaque partie appellera deux ou trois négociants chargés d'examiner les marchandises, et le prix le plus élevé qui sera offert par l'un d'eux sera réputé constituer la valeur réelle des dites marchandises.

Les droits seront prélevés sur le poids net : on déduira en conséquence le poids des emballages et contenants.

Si le négociant Français ne peut s'entendre avec l'employé Chinois sur la fixation de la tare, chaque partie choisera un certain nombre de caisses et de ballots parmi les colis objet du litige ; ils seront d'abord pesés brut, puis taris ensuite, et la tare moyenne des colis pesés servira de tare pour tous les autres.

Si pendant le cours de la vérification, il s'élève quelque difficulté qui ne puisse être résolue, le négociant Français pourra réclamer l'intervention du consul, lequel portera sur le champ l'objet de la contestation à la connaissance du chef des douanes, et tous deux s'efforceront d'arriver à un arrangement aimable ; mais la réclamation devra avoir lieu dans les vingt-quatre heures ; sinon, il n'y sera pas donné suite. Tant que le résultat de contestation restera pendant, le chef de la douane n'en portera pas l'objet sur ses livres, laissant ainsi toute latitude pour l'examen et la solution de la difficulté.

Les marchandises importées qui auraient éprouvé des avaries jouiront d'une réduction de droits proportionnelle à leur dépréciation. Celle-ci sera déterminé équitablement et s'il le faut par expertise contradictoire, ainsi qu'il a été stipulé plus haut pour la fixation des droits *ad valorem*.

Two Days allowed to report a Ship.

(British, Art. XXX.—American, Art. XIX.)

ARTICLE XX.—Tout bâtiment entré dans l'un des ports de la Chine, et qui n'a point encore levé le permis de débarquement mentionné dans l'Article XIX., pourra, dans les deux jours de son arrivée, quitter ce

port et se rendre dans un autre port sans avoir à payer ni droits de tonnage, ni droits de douane, attendu qu'il les acquittera ultérieurement dans le port où il effectuera la vente de ses marchandises.

Time and Manner of paying Duties.

(British, Arts. XXV, XXXIII., and XL.—American, Art. XXII.)

ARTICLE XXI.—Il est établi, de commun accord, que les droits d'importation seront acquittés par les capitaines ou négociants Français au fur et à mesure du débarquement des marchandises et après leur vérification. Les droits d'exportation le seront de la même manière lors de l'embarquement. Lorsque les droits de tonnage et de douane dus par un bâtiment Français auront été intégralement acquittés, le chef de la douane délivrera une quittance générale, sur l'exhibition de laquelle le consul rendra ses papiers de bord au capitaine, et lui permettra de mettre à la voile. Le chef de la douane désignera une ou plusieurs maisons de change, qui seront autorisées à recevoir la somme due par les négociants Français, au compte du gouvernement, et les récépissés, de ces maisons de change, pour tous les paiements qui leur auront été faits, seront réputés acquits du gouvernement Chinois. Ces paiements pourront s'effectuer soit en lingots, soit en monnaies étrangères dont le rapport avec l'argent aycé sera déterminé de commun accord entre le consul ou agent consulaire et le chef de la douane dans les différents ports, suivant le temps, le lieu, et les circonstances.

Tonnage Dues, Free Vessels, and Certificate for other Ports.

(British, Arts. XXIX., and XXXI.—American, Art. XVI.)

ARTICLE XXII.—Après l'expiration des deux jours mentionné dans l'Article XX., et avant de procéder au déchargement, chaque bâtiment de commerce Français acquittera intégralement les droits de tonnage ainsi réglés: Pour les navires de 150 tonneaux, de la jauge légale et au-dessus, à raison de cinq maces ($\frac{1}{2}$ taël) par tonneau; pour les navires jaugeant moins de 150 tonneaux, à raison d'un mace (1-10^e de taël) par tonneau; toutes les rétributions et surcharges additionnelles antérieurement imposées à l'arrivée et au départ sont expressément supprimées, et ne pourront être remplacées par aucune autre.

Lors du paiement du droit précité, le chef de la douane délivrera au capitaine ou au consignataire, un reçu en forme de certificat constatant que le droit de tonnage a été intégralement acquitté, et sur l'exhibition de ce certificat au chef de la douane de tout autre port où il lui conviendrait de se rendre, le capitaine sera dispensé de payer de nouveau pour son bâtiment le droit de tonnage; tout navire Français ne devant en être passible qu'une seule fois, à chacun de ses voyages d'un pays étranger en Chine.

Sont exemptés des droits de tonnage les barques, goëlettes, bateaux caboteurs, et autres embarcations Françaises, pontées ou non, employées au transport de passagers, bagages, lettres, comestibles, et généralement de tous objets non sujets aux droits; si les dites embarcations transportaient en outre des marchandises, elles resteraient dans la catégorie des navires jaugeant moins de 150 tonneaux, et paieraient à raison de 1-10^e de taël (1 mace) par tonneau.

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Les négociants Français pourront toujours affréter des jonques et autres embarcations Chinoises, lesquelles ne seront soumises à aucun droit de tonnage.

No higher Transit Duties to be levied in the Interior.

(British, Art. XXVIII.)

ARTICLE XXIII.—Toutes marchandises Françaises, après avoir acquitté dans l'un des ports de la Chine les droits de douane liquidés d'après le tarif, pourront être dans l'intérieur sans avoir à subir autre charge supplémentaire que le paiement des droits de transit suivant le taux modéré actuellement en vigueur, lesquels droits ne seront susceptibles d'aucune augmentation future.

Si des agents de la douane Chinoise, contrairement à la teneur du présent traité, exigeaient des rétributions illégales, ou prélevaient des droits plus élevés, ils seraient punis suivant les lois de l'empire.

Rule for Goods shipped from one Port to another.

(British, Art. XLV.—American, Arts. XVI., XIX., and XXI.)

ARTICLE XXIV.—Tout navire Français entré dans l'un des ports ouverts au commerce étranger, et qui voudra n'y décharger qu'une partie de ses marchandises, ne paiera les droits de douane que pour la partie débarquée : il pourra transporter le reste de sa cargaison dans un autre port et l'y vendre. Les droits seront alors acquittés.

Dans le cas où des Français, après avoir acquitté dans un port les droits sur des marchandises, voudraient les ré-exporter et aller les vendre dans un autre port, ils en prévendraient le consul ou agent consulaire. Celui-ci de son côté en informera le chef de la douane, lequel, après avoir constaté l'identité de la marchandise et la parfaite intégrité des colis, remettra aux réclamants une déclaration attestant que les droits afférents aux dites marchandises ont été effectivement acquittés. Muni de cette déclaration les négociants Français n'auront à leur arrivée dans l'autre port qu'à la présenter par l'entremise du consul au chef de la douane, qui délivrera pour cette partie de la cargaison, sans retard et sans frais, un permis de débarquement en franchise de droits ; mais si l'autorité découvrirait de la fraude, ou de la contrebande parmi les marchandises ainsi ré-exportées celles-ci seraient, après vérification, confisquées au profit du gouvernement Chinois.

Transhipment of Cargo by Customs Permit.

(British, Art. XL.—American, Art. XXIII.)

ARTICLE XXV.—Aucun transbordement de marchandises ne pourra avoir lieu que sur permis spécial et dans un cas d'urgence ; s'il devient indispensable d'effectuer cette opération, il devra en être référé au consul, qui délivrera un certificat, sur le vu duquel le transbordement sera autorisé par chef de la douane. Celui-ci pourra toujours déléguer un employé de son administration pour y assister.

Tout transbordement non autorisé, sauf le cas de péril en la demeure, entraînera la confiscation, au profit du gouvernement Chinois de la totalité des marchandises illicitement transbordées.

Standard Weights and Measures to be furnished.

(British, Art. XXXIV.)

ARTICLE XXVI.—Dans chacun des ports ouverts au commerce étranger le chef de la douane recevra pour lui-même, et déposera au consulat Français, des balances légales pour les marchandises et pour l'argent, ainsi que des poids et des mesures exactement conforme aux poids et aux mesures en usage à la douane de Canton, et revêtus d'une estampille et d'un cachet constatant cette conformité. Ces étalons seront la base de toutes les liquidations de droits, et de tous les paiements à faire au gouvernement Chinois. On y aura recours en cas de contestation sur le poids et la mesure des marchandises, et il sera statué d'après les résultats qu'ils auront donnés.

Duties to be paid by the Tariff; Septennial Revision.

(British, Art. XXVII.—American, Art. XV.)

ARTICLE XXVII.—Les droits d'importation et d'exportation prélevés en Chine sur le commerce Français seront réglés conformément au tarif annexé au présent traité, sous le sceau et la signature des plénipotentiaires respectifs. Ce tarif pourra être révisé de sept en sept années, pour être mis en harmonie avec les changements de valeur apportés par le temps sur les produits du sol et de l'industrie des deux empires.

Moyennant l'acquit de ces droits, dont il est expressément interdit d'augmenter le montant, et que ne pourront aggraver aucune espèce de charge ou de surtaxe quelconque, les Français seront libres d'importer en Chine, des ports Français ou étrangers, et d'exporter également de Chine pour toute destination, toutes les marchandises qui ne seraient pas, au jour de la signature du présent traité, et d'après la classification du tarif ci-annexé, l'objet d'une prohibition formelle ou d'un monopole spécial. Le gouvernement Chinois renonçant à la faculté d'augmenter par la suite le nombre des articles réputés contrebande ou monopole, aucune modification ne pourra être apportée au tarif qu'après une entente préalable avec le gouvernement Français et de son plein et entier consentement.

A l'égard du tarif aussi bien que pour toute stipulation introduite ou à introduire dans les traités existants, ou qui seraient ultérieurement conclus, il demeure bien et dûment établi que les négociants, et en général tous les citoyens Français en Chine, auront droit toujours et partout au traitement de la nation la plus favorisée.

Smuggling prohibited under Penalty of Confiscation.

(British, Arts. XLVII and XLVIII.—American, Art. XIV.)

ARTICLE XXVIII.—La publication d'un tarif convenable et régulier étant désormais tout prétexte à la contrebande, il n'est pas à présumer qu'aucun acte de cette nature soit commis par des bâtiments du commerce Français dans les ports de la Chine. S'il en était autrement, toute marchandise introduite en contrebande par des navires ou par des négociants Français dans ces ports, quelle que soit d'ailleurs, sa valeur et sa nature, comme aussi toute denrée prohibée débarquée frauduleusement, seront saisies par l'autorité locale et confisquées au profit du gouvernement Chinois. En outre, celui-ci pourra, si bon lui semble, interdire l'entrée

de la Chine au bâtiment surpris en contravention et le contraindre à partir aussitôt après l'apuration de ses comptes.

Si quelque navire étranger se couvrirait frauduleusement du pavillon de la France, le gouvernement Français prendrait les mesures nécessaires pour la répression de cet abus.

French national Vessels stationed in open Ports.

(British, Art. LII—American, Art. IX.)

ARTICLE XXIX.—Sa Majesté l'Empereur des Français pourra faire stationner un bâtiment de guerre dans les ports principaux de l'empire, où sa présence serait jugée nécessaire pour maintenir le bon ordre et la discipline parmi les équipages des navires marchands et faciliter l'exercice de l'autorité consulaire; toutes les mesures nécessaires seraient prises pour que la présence de ces navires de guerre n'entraînât aucun inconvénient, et leurs commandants recevraient l'ordre de faire exécuter les dispositions stipulées dans l'Article XXXIII., par rapport aux communications avec la terre et à la police des équipages. Les bâtiments de guerre ne seront assujettis à aucun droit.

Privileges of French national Vessels in China.

(British, Art. LII—American, Art. IX.)

ARTICLE XXX.—Tout bâtiment de guerre Français croisant pour la protection du commerce sera reçu en ami et traité comme tel dans tous les ports de la Chine où il se présentera. Ces bâtiments pourront s'y procurer les divers objets de rechange et de ravitaillement dont ils auraient besoin, et, s'ils ont fait des avaries, les réparer et acheter dans ce but les matériaux nécessaires, le tout sans la moindre opposition.

Il en sera de même à l'égard des navires de commerce Français qui, par suite d'avaries majeures ou pour toute autre cause, seraient contraints de chercher refuge dans un port quelconque de la Chine.

Si quelqu'un de ces bâtiments venait à se perdre sur la côte, l'autorité Chinoise la plus proche, dès qu'elle en serait informée, porterait sur le champ assistance à l'équipage, pourvoierait à ses premiers besoins, et prendrait les mesures d'urgence nécessaires pour le sauvetage du navire et la préservation des marchandises. Puis elle porterait le tout à la connaissance du consul ou agent consulaire le plus à portée du sinistre, pour que celui-ci, de concert avec l'autorité compétente, pût aviser aux moyens de rapatrier l'équipage et de sauver les débris du navire et de la cargaison.

Rights of French Neutrals in War.

(American, Art. XXVI.)

ARTICLE XXXI.—Dans le cas où, par le suite des temps, la Chine entrerait en guerre avec une autre puissance, cette circonstance ne porterait aucune atteinte au libre commerce de la France avec la Chine ou avec la nation ennemie. Les navires Français pourraient toujours, sauf les cas de blocus effectif, circuler sans obstacle des ports de l'une aux ports de l'autre, y trafiquer comme à l'ordinaire et y importer ou en exporter toute espèce de marchandises non prohibées.

Deserters and Criminals to be mutually given up.

(British, Arts XVI and XXI.—American, Art. XVIII.)

ARTICLE XXXII.—S'il arrive que des matelots ou autres individus désertent des bâtiments de guerre, ou s'évadent des navires de commerce Français, l'autorité Chinoise, sur la réquisition du consul, ou, à son défaut, du capitaine, fera tous ses efforts pour découvrir et restituer sur le champ, entre les mains de l'un ou de l'autre, les susdits déserteurs ou fugitifs.

Pareillement si des Chinois déserteurs ou prévenus de quelque crime vont se réfugier dans des maisons Françaises, ou à bord de navires appartenant à des Français, l'autorité locale s'adressera au consul, qui, sur la preuve de la culpabilité des prévenus, prendra immédiatement les mesures nécessaires pour que leur extradition soit effectuée. De part et d'autre, on évitera soigneusement tout recel et toute connivence.

French Seamen to be under Consular Regulations.

(American, Art. XII.)

ARTICLE XXXIII.—Quand des matelots descendront à terre, ils seront soumis à des règlements de discipline spéciale qui seront arrêtés par le consul et communiqués à l'autorité locale, de manière à prévenir, autant que possible, toute occasion de querelle entre les marins Français et les gens du pays.

Pirates to be punished, and stolen Property to be restored.

(British, Art. XIX.—American, Art. XIII.)

ARTICLE XXXIV.—Dans le cas où de navires de commerce Français seraient attaqués ou pillés par des pirates dans des parages dépendants de la Chine, l'autorité civile et militaire du lieu le plus rapproché, dès qu'elle aura connaissance du fait, en poursuivra activement les auteurs et ne négligera rien pour qu'ils soient arrêtés et punis conformément aux lois. Les marchandises enlevées, en quelque lieu et dans quelque état qu'elles se trouvent, seront remises entre les mains du consul, qui se chargera de les restituer aux ayant-droit. Si l'on ne peut s'emparer des coupables ni recouvrer la totalité des objets volés, les fonctionnaires Chinois subiront la peine infligée par la loi en pareille circonstance, mais ils ne sauraient être rendus pécuniairement responsables.

Frenchmen to address Chinese Officers through the Consul.

(British, Art. XVII.—American, Art. XXVIII.)

ARTICLE XXXV.—Lorsqu'un sujet Français aura quelque motif de plainte, ou quelque réclamation à formuler contre un Chinois, il devra d'abord exposer ses griefs au consul, qui, après avoir examiné l'affaire, s'efforcera de l'arranger à l'amiable. De même, quand un Chinois aura à se plaindre d'un Français, le consul écoutera sa réclamation avec intérêt, et cherchera à ménager un arrangement à l'amiable. Mais, si dans l'un ou l'autre cas la chose était impossible, le consul requerra l'assistance du fonctionnaire Chinois compétent, et tous deux, après avoir examiné conjointement l'affaire, statueront suivant l'équité.

Protection to Frenchmen.

(British, Arts. XVI. and XVIII.—American, Art. XI.)

ARTICLE XXXVI.—Si dorénavant des citoyens Français éprouvaient quelque dommage, ou s'ils étaient l'objet de quelque insulte ou vexation de la part de sujets Chinois, ceux-ci seraient poursuivis par l'autorité locale, qui prendra les mesures nécessaires pour la défense et la protection des Français; à bien plus forte raison, si des malfaiteurs ou quelque partie égarée de la population tentaient de piller, de détruire, ou d'incendier les maisons, les magasins des Français, ou tout autre établissement formé par eux, la même autorité, soit à la réquisition du consul, soit de son propre mouvement, enverrait en toute hâte la force armée pour dissiper l'émeute, s'emparer des coupables, et les livrer à toute la sévérité des lois; le tout sans préjudice des poursuites à exercer par qui de droit pour indemnisation des pertes éprouvées.

Manner of Prosecution of Debts.

(British, Arts. XXII. and XXIII.—American, Art. XXIV.)

ARTICLE XXXVII.—Si des Chinois, à l'avenir, deviennent débiteurs de capitaines ou de négociants Français, et leur font éprouver des pertes par fraude ou de toute autre manière, ceux-ci n'auront plus à se prévaloir de la solidarité qui résultait de l'ancien état de choses; ils pourront seulement s'adresser par l'entremise de leurs consuls à l'autorité locale, qui ne négligera rien, après avoir examiné l'affaire, pour contraindre les prévenus à satisfaire à leurs engagements suivant la loi du pays. Mais, si le débiteur ne peut être retrouvé, s'il est mort ou en faillite, et s'il ne reste rien pour payer, les négociants Français ne pourront point appeler l'autorité Chinoise en garantie.

En cas de fraude ou de non-paiement de la part des négociants Français, le consul prêtera de la même manière, assistance aux réclamants, sans que, toutefois, ni lui ni son gouvernement puissent, en aucune manière, être rendus responsables.

Each Nation to arrest and punish its own Criminals.

(British, Arts. XV. and XVI.—American, Arts. XXVII. and XI.)

ARTICLE XXXVIII.—Si malheureusement il s'élevait quelque rixe ou quelque querelle entre des Français et des Chinois, comme aussi dans le cas où, durant le cours d'une semblable querelle, un ou plusieurs individus étaient tués ou blessés, soit par des coups de feu, soit autrement, les Chinois seront arrêtés par l'autorité Chinoise, qui se chargera de les faire examiner et punir, s'il y a lieu, conformément aux lois du pays. Quant aux Français, ils seront arrêtés à la diligence du consul, et celui-ci prendra toutes les mesures nécessaires pour que les prévenus soient livrés à l'action régulière des lois Françaises, dans la forme et suivant les dispositions qui seront ultérieurement déterminées par le gouvernement Français.

Il en sera de même en toute circonstance analogue et non prévue dans la présente convention, le principe étant que pour la répression des crimes et délits commis par eux en Chine, les Français seront constamment régis par les lois Françaises.

Chinese Officers have no Jurisdiction over Frenchmen.

(British, Art. XVI.—American, Art. XXVII.)

ARTICLE XXXIX.—Les Français en Chine dépendront également, pour toutes les difficultés ou les contestations qui pourraient s'élever entre eux, de la juridiction Française. En cas de différends survenus entre Français et étrangers, il est bien stipulé que l'autorité Chinoise n'aura à s'en mêler en aucune manière. Elle n'aura pareillement à exercer aucune action sur les navires Français : ceux-ci ne relèveront que de l'autorité Française et du capitaine.

Frenchmen to enjoy the same Rights as others.

(British, Art. LIV.—American, Art. XXX.—Russian, Art. XL.)

ARTICLE XL.—Si dorénavant, le gouvernement de Sa Majesté l'Empereur des Français jugeait convenable d'apporter des modifications à quelques unes des clauses du présent traité, il sera libre d'ouvrir à cet effet des négociations avec le gouvernement Chinois, après un intervalle de douze années révolues, à partir de l'échange des ratifications. Il est d'ailleurs entendu que toute obligation non consignée expressément dans la présente convention ne saura être imposée aux consuls ou aux agents consulaires, non plus qu'à leurs nationaux, tandis que, comme il a été stipulé, les Français jouiront de tous les droits, privilèges, immunités, et garanties quelconques qui auraient été ou qui seraient accordés par le gouvernement Chinois à d'autres puissances.

Claims due for Losses to be paid by Chinese.

(British, Art. LV.)

ARTICLE XLI.—Sa Majesté l'Empereur des Français voulant donner à Sa Majesté l'Empereur de la Chine une preuve de ses sentiments, qui l'animent, consent à stipuler dans des articles séparés, ayant la même force et teneur que s'ils étaient insérés mot à mot au présent traité, les arrangements convenus entre les deux gouvernements au sujet des questions antérieures aux événements de Canton et aux frais qu'ils ont occasionnés au gouvernement de Sa Majesté l'Empereur des Français.

Exchange of Ratifications.

(British, Art. LVI.—American, conclusion.)

ARTICLE XLII. et dernier.—Les ratifications du présent traité d'amitié, de commerce, et de navigation seront échangées à Pékin dans l'intervalle d'un an, à partir du jour de la signature, ou plus tôt si faire se peut, par Sa Majesté l'Empereur des Français et par Sa Majesté l'Empereur de la Chine.

Après l'échange de ces ratifications, le traité sera porté à la connaissance de toutes les autorités supérieures de l'empire dans les provinces et dans la capitale, afin que sa publicité soit bien établie.

En foi de quoi, les plénipotentiaires respectifs ont signé le présent traité, et y ont apposé leurs cachets.

Fait à Tientsin, en quatre expéditions, le vingt-septième jour du mois de Juin, de l'an de grâce mil huit cent cinquante-huit, correspondant au dix-septième jour de la cinquième lune de la huitième année de Hien-fung.

(L.S.)

BARON GROS.

(L.S.)

KWEI-LIANG.

(L.S.)

HOUA-CHA-NA.

Section 4.

TREATY OF PEACE, FRIENDSHIP, COMMERCE, AND
NAVIGATION, BETWEEN RUSSIA AND CHINA.

CONCLUDED AT TIENTSIN, JUNE 14th, 1858.

(Translated from the French.)

His Majesty the EMPEROR AND AUTOCRAT OF ALL THE RUSSIAS, and his Majesty the EMPEROR OF CHINA, holding it to be of the first necessity to define clearly the mutual relations between Russia and China, and to establish new regulations for the advantage of the two nations, have appointed, for such purpose, their plenipotentiaries, that is to say :—

His Majesty the Emperor of all the Russias, his Aide-de-camp, General Vice-Admiral Count EUPHEMIUS POUTIATINE, Imperial Commissioner to China and Commander-in-chief of the Russian squadron in the Pacific ocean ;

And his Majesty the Emperor of China for his empire, the Da-hioh-chi of the Oriental Section, Chief Director of the Tribunal of Criminal Justice, the High Functionary KWEILIANG, and for his empire the President of the Tribunal of Inspection, Chief of Division of the Heavy Infantry of the Blue-fringed Banner, the High Functionary HWASHANA.

The said plenipotentiaries, in virtue of the power which they have received from their respective governments, have agreed and concluded upon the following articles :—

Mutual Peace and Protection to be maintained.

(British, Art. I.—American, Art. I.—French, Art. I.)

ARTICLE I.—The present treaty confirms afresh the peace and friendship which has existed through many years between his Majesty the Emperor of all the Russias and his Majesty the Emperor of China, and between their respective subjects.

Russian subjects who reside in China, and Chinese subjects who may be in Russia, shall constantly enjoy the protection of the governments of the two empires, as well for the safety of their persons as for their property.

Diplomatic Intercourse of the Two Governments.

(British, Arts. III. and IV.—American, Arts. IV. and V.—French, Arts. V. and VI.)

ARTICLE II.—Henceforward communications between the supreme government of Russia and the supreme government of China shall not be made as heretofore up to this time, by the Senate on the one part and the tribunal Li-fan-yuan on the other ; but the minister of foreign affairs of Russia shall be the person who will communicate with the senior member of the council of state, or the chief minister at Peking. They shall treat on a footing of perfect equality. The ordinary correspondence of the personages above-mentioned shall be transmitted through the authorities on the frontiers of the two respective states. Communications of grave importance shall be carried to the capital by a person

employed *ad hoc*, who shall be enabled to enter into verbal explanations with the members of the council of state and the chief minister. On his arrival, he shall transmit his dispatches through the medium of the Tribunal of Rites (Li Pou.)

Equality shall be observed likewise in the correspondence and interviews of envoys and ministers plenipotentiary of Russia with the members of the council of state, the ministers of the court of Peking, and the governor-generals of frontier and maritime provinces; and in the relations between the governor-general and between the authorities on the frontiers of the two nations.

If the Russian government should judge it necessary to appoint a minister plenipotentiary to reside in China, he shall treat in his personal relations and correspondence with the local Chinese authorities, and the minister at Peking, according to the general rules now recognized by all foreign states. The envoys of Russia may go to Peking, passing either by Kiakta and Urga, or by Takoo at the mouth of the Pei-ho, or by any other open port or city of China. After a preliminary notification, the Chinese government will immediately cause the necessary arrangements to be taken that the journey of the envoy and his suite may be prompt and comfortable. His reception at the capital shall be marked by the honours due to his rank; suitable residences shall be prepared, and all things necessary shall be supplied him.

All expenses occasioned by sending diplomatic missions from Russia to China shall be defrayed by the Russian government, and in no case become a charge on the Chinese government.

Ports open to Russian Trade.

(British, Art. IX.—American, Art. XIV.—French, Art. XIII.)

ARTICLE III.—Henceforward commerce between Russia and China shall be carried on not only at the places designated on the frontier, but also by sea. Russian merchant vessels may traffic at the following ports—Shanghai, Ningpo, Fuhchau-fu, Amoy, Canton, Taiwan-fu (on the island of Formosa), and Kiungchau-fu (on the island of Hainan.)

Commerce to be according to Law.

(British, Art. XVI.—American, Art. XV.—French, Art. XIII.)

ARTICLE IV.—In future there shall be no limit placed by the two governments as to the number of merchants or amount of capital engaged in the commerce. In maritime commerce, and in all details which relate to it—that is to say, invoices of goods imported, payment of harbour dues, duties according to existing tariffs, &c.,—Russian subjects shall conform to the general rules established for foreign commerce in the ports of China.

All unlawful commerce which shall be carried on by Russians shall be punished by the confiscation of the merchandise landed, for the benefit of the Chinese government.

Privileges of Russian Consuls in China.

(British, Art. XVII.—American, Art. X.—French, Art. VIII.)

ARTICLE V.—The Russian government shall be at liberty to appoint

consuls in the ports open to commerce. It may send thither vessels of war to maintain order for Russian subjects, and to give aid to the authority of the consuls. The relations between the consul and the local authorities, the cession of ground suitable for the building of churches, of houses and stores, the purchase by Russians of lands from the Chinese, and all transactions which are of reference to the consul, shall be conducted in observance with the general rules of the Chinese government in business with foreigners.

Shipwrecked Persons and Property.

(British, Art. XVIII.—American, Art. XIII.—French, Art. XVI.)

ARTICLE VI.—If a Russian war or merchant vessel should be wrecked on the coast, the nearest Chinese authorities shall at once give assistance to the crew, and shall take measures necessary for salvage of the vessel and cargo. It shall facilitate also the conveyance of the crew and cargo to the nearest port where there is a Russian consul, or an agent of a nation friendly to Russia, or to the frontier, if the shipwreck took place near it. The Russian government will reimburse the costs occasioned by saving the crew and cargo.

In cases in which Russian war or merchant vessels may be under the necessity of making repairs or procuring fresh water and provisions, they may enter, on their route, ports not opened to commerce, and purchase what they need, at prices amicably agreed upon, and free from any obstacles interposed by the local authorities.

Each Nation to exercise Jurisdiction over its own Subjects.

(British, Art. XXIV.—American, Art. XXVII.—French, Art. XIV.)

ARTICLE VII.—Any dispute between Russian and Chinese subjects, in the open ports and cities, shall be examined into by the Chinese authorities in concert with the Russian consul, or the agent who represents the authority of the Russian government at the place.

Russian subjects guilty of any offence or crime shall be judged according to Russian law. In like manner, Chinese subjects, for every crime or attempt against the person or property of a Russian, shall be tried and punished according to the laws of their country.

Russian subjects who shall have penetrated into the interior of China, and shall have there committed some crime or offence, shall be taken to the frontier, or to one of the open ports where a Russian consul may reside, to be tried and punished according to the Russian laws.

Toleration of the Christian Religion.

(British, Art. XIII.—American, Art. XXIX.—French, Art. XI.)

ARTICLE VIII.—The Chinese government having recognised the fact that the Christian doctrine promotes the establishment of order and peace among men, promises not to persecute its Christian subjects for the exercise of the duties of their religion; they shall enjoy the protection of all those who profess other creeds tolerated in the empire. The Chinese government, considering the Christian missionaries as worthy men who do not seek worldly advantages, will permit them to propagate Christianity amongst its subjects, and will not hinder them from moving about in the interior of the empire. A certain number of missionaries, setting out

from the open ports or cities, shall be provided with passports, signed by Russian authorities.

Frontier between Russia and China to be defined.

ARTICLE IX.—Those parts of the boundary between Russia and China which are not ascertained shall be examined, without delay, at the places themselves.

The two governments will appoint for this purpose deputies, who shall fix the line of demarcation, and shall conclude in relation thereto a convention, which shall be annexed as a separate article to the present treaty.

Maps and detailed description of the frontier shall be afterwards prepared, and will serve as incontestable documents for future time.

Russian Ecclesiastical Mission at Peking.

ARTICLE X.—There shall no longer be a fixed term for the sojourn of the Russian ecclesiastical mission at Peking. The members of such mission may, on the authorization of their government, return to their native country at any time. The vacancy may be filled by a new member.

The Chinese government shall no longer be at expense for maintaining the mission; all its expenses shall be at the charge of the Russian government.

The travelling expenses of members of the mission, of couriers, and of other persons whom the Russian government may dispatch from Kiakta and the open ports of China, and *vice versa*, shall be paid by the Russian government. The Chinese local authorities are under obligations on their part to take the necessary measures that the journeys of all the persons above-mentioned be speedy and convenient.

International Postal Service by Kiakta.

ARTICLE XI.—A regular post service shall be established between Kiakta and Peking, for communication between the two governments, as well as for the use of the ecclesiastical mission at Peking.

The Chinese courier shall be dispatched on a fixed day, once a month from Peking to Kiakta; and shall in the space of fifteen days, or less, deliver the official packets and letters at their place of destination.

Moreover, every three months, or four times a year, a convoy shall be dispatched at Kiakta for Peking, and *vice versa*, for the transportation of all kinds of remittances and effects. This convoy shall make the journey in the period of one month. All the expenses occasioned by the establishment and upholding of these communications shall be paid, one half thereof by each government.

Russians to enjoy the same Privileges in China as others.

(British, Art. XLIX.—American, Art. XXX.—French, Art. XLIV.)

ARTICLE XII.—All privileges, political, commercial, or other, which shall hereafter be acquired by nations the most favoured by the Chinese government, shall at the same time be extended to Russia, without needing any preliminary negotiation.

This treaty shall be presently ratified by the Emperor of China; and after it shall have been ratified by the Emperor of Russia, the exchange of ratifications shall be made at Peking in one year, or sooner, if it can be done.

Copies in the Russian, Manchu, and Chinese languages, bearing the signatures and seals of the plenipotentiaries of the two nations, are now exchanged, and the Manchu text shall serve as the basis of interpretation of all the articles of the treaty, which shall be observed by the two high contracting parties faithfully and inviolably.

Done and signed in the city of Tientsin, the 17th of June, of the year 1858 after the birth of Jesus Christ, and in the fourth year of the reign of his Majesty Alexander II.

(L. S.)

COUNT EUPHEMIUS POUTIATINE.

(L. S.)

KWEILIANG.

HWASHANA.

In pursuance to Act. IX. of this treaty, the frontier was examined by Chinese and Russian commissioners, and its limits expressed in a treaty of fifteen articles drawn up at Peking between his Imperial Highness Prince Kung and General Ignatieff, and signed November 14th, 1860. In Art. I. it is stipulated that the eastern boundary shall follow the river Amoor to its junction with the river Usuri, the country to the north belonging to Russia, and that to the south belonging to China. From the mouth of the Usuri southward to lake Hingka, that river and the Songatchan shall be the boundary, east of which shall be Russian, and west of which Chinese, territory; from the source of the Songatchan the boundary shall traverse lake Hingka directly to the Peh-ling; and from the mouth of the Peh-ling, it shall follow the range of mountains to the Huptu's mouth, and thence to the mouth of the Tu-men, running along the Hu-chua and Hai-chong-kien range; east of this line belongs to Russia, and west of it to China. Along the frontier of the river Tu-men, there shall be a line of neutral territory 20 li in breadth. From the time of setting up the boundary marks there shall never be any changes made; and Russia engages not to encroach upon Chinese territory next the frontier, nor will ground be seized in any other part of China.

In Art II. the old boundary of 1728 is maintained from the Amoor to Tarbagatai, thence the western boundary reaches westward to lake Dzisang, from which, following the range of the Tien-shan southwesterly to Lake Temurtu, it proceeds on south and west to the frontiers of Khokand.

Art. III. provides for placing boundary marks and exchanging certified maps of the frontier, to mark and authenticate its position. No duties are to be levied by either nation along the entire frontier.

Art. V. provides that Russian merchants may trade at Kurun and Kalgan or Chang-kia-kau, between Kiakta and Peking. The number of Russian merchants at any mart in China (*i. e.* beyond the Great Wall) shall not exceed two hundred.

Art. VI. stipulates for trade at Ili, Tarbagatai or Tuguchuk, and at Kashgar; and Art. VIII. provides for the establishment of consuls at these three places and Kurun, and defines their duties and powers.

Art. VII. allows the merchants of each nation, while frequenting the marts of the other, to carry on their traffic without interference on the part of officials as to the time of their sojourn or the extent of their business.

Art. XII. explains the times and modes of conveying letters and parcels from Kiakta to Peking; the monthly post shall not exceed twenty days in transit, and the boxes and parcels from Kiakta shall be forwarded once in two months, not over 20 packages at a time, and none of them exceeding 120 catties in weight. The couriers shall always stop at the Russian consul's in Kurun on their journey. The Russian minister or Russian merchants may send their own couriers at any time, after obtaining permission from the Chinese authorities, who will not hinder them in any way.

The other articles of this treaty, which is designed especially to regulate the internal trade between Russia and China, refers to the modes of intercourse between the respective officers of the two countries along the frontier; the treatment of runaway, or stray cattle; and the transmission of official documents, either across the frontier, or from Peking to Kiakta.

In addition to the stipulations of these four treaties, the conventions signed by the French and English Plenipotentiaries respectively, at Peking on the 25th and 24th of October, 1860, with his Imperial Highness Prince Kung, provided further that the port of Tientsin should be immediately opened to foreign trade on the same conditions as the other ports in China; and further, in Art. V. of the English, that, "as soon as the ratifications of the Treaty of 1858 shall have been exchanged, his Imperial Majesty, the Emperor of China, will by decree command the high authorities of every province to proclaim throughout their jurisdictions, that Chinese choosing to take service in the British colonies, or other parts beyond sea, are at perfect liberty to enter into engagements with British subjects for that purpose, and to ship themselves and their families on board any British vessel at any of the open ports of China; also that the high authorities aforesaid shall, in concert with her Britannic Majesty's representative in China, frame such regulations for the protection of Chinese emigrating as above, as the circumstances of the different open ports may demand." The IXth article of the French Convention contained a similar stipulation respecting emigration.

Since the preceding four treaties with China have gone into effect, the Prussian envoy Count Eulenberg has negotiated a treaty of amity and commerce in 1861, of similar tenor. The Portuguese government has likewise negotiated one by its envoy, I. F. Guimaraes, Governor-general of Macao, in August, 1862, the details of which are noticed in the section referring to Macao.

CHAPTER II.

ARTICLES OF TRADE WITH CHINA.

Section 1.

TARIFF ON ARTICLES OF IMPORT.

THE tables of duties on exports and imports in this and the next section are according to the tariff of 1858; each table has four columns, which contain the duties reckoned in as many different ways:—

Col. 1st shows the duty in the Chinese currency of taels, mace, candareens, and cash, as stated in the Chinese version of the tariff.

Col. 2d contains the same duties in dollars and cents, at the usual exchange of 1,000 dollars for 717 taels.

Col. 3d contains the amounts in the first column reckoned in English currency, but giving the duty at so much per *cwt.* and *lb.*, where it is *picul* and *catty* in the Chinese, except such articles as are rated by the piece, yard, chang, box, ton, pair, dozen, gross, hundred, or thousand.

Col. 4th contains the amounts in the first column reckoned in French currency of francs and centimes, (estimating a tael at 7.65 *fr.*) but giving the duty at so much per 100 kilogrammes (*i. e.* 220½ *lbs.* *av.*, or 165½ *catties*), instead of per *picul* or *catty*, except when the rate is reckoned otherwise.

ARTICLES OF IMPORT.	Per	Chinese Duties.	Duties in Spanish currency	Duties per <i>cwt.</i> or <i>lb.</i> in English currency.			Duties per 100 kilograms in French currency.
				£	s.	d.	Fr. Cent.
Agar-agar,	picul	T. M. C. C. 0 1 5 0	D. C. 0.21	0	0	9	1 90
Asafoetida,	"	0 6 5 0	0.91	0	3	3	8 20
Beeswax, yellow,	"	1 0 0 0	1.40	0	5	0½	12 62
Betel nut,	"	0 1 5 0	0.21	0	0	9	1 90
" Husk,	"	0 0 7 5	0.11	0	0	5	0 95
Bicho-do-mar, black,	"	1 5 0 0	2.09	0	7	6½	18 52
" white,	"	0 3 5 0	0.49	0	1	9½	4 42
Birdsnests, 1st quality,	catty	0 5 5 0	0.77	0	2	9½	69½ 23
" 2d "	"	0 4 5 0	0.63	0	2	3½	56½ 24
" 3d " or uncleaned	"	0 1 5 0	0.21	0	0	9	189 30
Buttons, Brass,	gross	0 0 5 5	0.07	0	0	4	0 41
Camphor, Baroos, clean,	catty	1 3 0 0	1.81	0	6	8½	164½ 00
" refuse,	"	0 7 2 0	1.00	0	3	8	509 00
Canvas and Cotton Duck, not exceeding 50 yards long,	piece	0 4 0 0	0.56	0	2	5	3 07
Cardamoms, superior,	picul	1 0 0 0	1.40	0	5	0½	12 62
" inferior, or Grains of Paradise,	"	0 5 0 0	0.70	0	2	6½	6 30
Cinnamon,	"	1 5 0 0	2.09	0	7	6½	18 92
Clocks,	5 per cent	<i>ad valorem</i>					
Cloves,	picul	0 5 0 0	0.70	0	2	6½	6 30
" Mother,	"	0 1 8 0	0.25	0	0	10½	2 28
Coal, foreign,	ton	0 0 5 0	0.07	0	0	3½	0 38

ARTICLES OF IMPORT.	Per	Chinese Duties.	Duties in Spanish currency.	Duties per cent. or lb. in English currency.	Duties per 100 kilograms in French currency.
		T. M. C. C.	D. C.	£ s. d.	Fr. Cent.
Cochineal,	picul	5 0 0 0	6 97	1 5 2½	63 11
Coral,	catty	0 1 0 0	0 14	0 0 6	126 22
Cordage, Manila,	picul	0 3 5 0	0 49	0 1 9½	4 42
Cornelians,	hundred	0 3 0 0	0 42	0 1 9½	2 30
" Beads,	picul	7 0 0 0	9 76	1 15 3½	88 40
Cotton, raw,	"	0 3 5 0	0 49	0 1 9½	4 42
<i>Cotton Piece Goods.</i>					
Gray, white, plain and twilled, exceeding 34 in. wide, and not exceeding 40 yds. long...	piece	0 0 8 0	0 11	0 0 5½	0 60
Piece Goods, exceeding 34 in. wide, and exceeding 40 yds. long,	every 10 yds.	0 0 2 0	0 03	0 0 1½	0 15
Piece Goods, Drills and Jeans, not exceeding 30 in. wide and not exceeding 40 yds. long...	piece	0 1 0 0	0 14	0 0 7½	0 76
Piece Goods, not exceeding 30 in. wide, and not exceeding 30 yds. long,	"	0 0 7 5	0 10½	0 0 5	0 57
Piece Goods, T-Cloths, not exceeding 34 in. wide, and not exceeding 48 yds. long, ...	"	0 0 8 0	0 11	0 0 5½	0 60
Piece Goods, not exceeding 34 in. wide, and not exceeding 24 yds. long,	"	0 0 4 0	0 05½	0 0 2½	0 31
Dyed, figured and plain, not exceeding 36 in. wide, and not exceeding 40 yds. long, ...	"	0 1 5 0	0 21	0 0 10½	1 20
Fancy, White Brocades and White Spotted Shirtings, not exceeding 36 in. wide, and not exceeding 40 yds. long, ..	"	0 1 0 0	0 14	0 0 7½	0 76
Printed Chintzes and Furnitures, not exceeding 31 in. wide, and not exceeding 30 yds. long,	"	0 0 7 0	0 09½	0 0 4½	0 54
Cambrics, not exceeding 46 in. wide, and not exceeding 24 yds. long,	"	0 0 7 0	0 09½	0 0 4½	0 54
Cambrics, not exceeding 46 in. wide, and not exceeding 12 yds. long,	"	0 0 3 5	0 05	0 0 2½	0 27
Muslins, not exceeding 46 in. wide, and not exceeding 24 yds. long,	"	0 0 7 5	0 10½	0 0 5	0 57
Muslins, not exceeding 46 in. wide, and not exceeding 12 yds. long,	"	0 0 3 5	0 05	0 0 2½	0 27
Damasks, not exceeding 36 in. wide, and not exceeding 40 yds. long,	"	0 2 0 0	0 28	0 1 2½	1 53
Dimities, or Quiltings, not exceeding 40 in. wide, and not exceeding 12 yds. long, ...	"	0 0 6 5	0 09	0 0 4½	0 50
Ginghams, not exceeding 28 in. wide, and not exceeding 30 yds. long,	"	0 0 3 5	0 05	0 0 2½	0 27
Handkerchiefs, not exceeding 1 yd. square,	dosen	0 0 2 5	0 03½	0 0 1½	0 20
Fustians, not exceeding 35 yds. long,	piece	0 2 0 0	0 28	0 1 2½	1 53
Velveteens, not exceeding 34 yds. long,	"	0 1 5 0	0 21	0 0 10½	1 20

ARTICLES OF IMPORT.	Per	Chinese Duties.	Duties in Spanish currency.	Duties per cent or lb. in English currency.	Duties per 100 kilograms in French currency.
		T. N. C. C.	D. C.	£ s. d.	Fr. Cent.
Cotton Thread,	picul	0 7 2 0	1 00	0 3 8	9 10
Yarn,	"	0 7 0 0	0 98	0 3 6½	8 84
Cow Bellow, India	catty	1 5 0 0	2 09	0 7 6½	1894 36
Cutch,	picul	0 1 8 0	0 25	0 0 10½	2 28
Elephants' Teeth, whole, ...	"	4 0 0 0	5 58	1 0 2	50 52
" " broken, ...	"	3 0 0 0	4 18	0 15 1½	37 86
Feathers, Kingfisher's, Pea-	hundred	0 4 0 0	0 56	0 2 5	3 07
cock's,		1 0 0 0	1 40	0 5 0½	12 62
Fishmaws,	picul	0 2 0 0	0 28	0 1 0	2 52
Fish-skins,	"	0 0 3 0	0 04	0 0 1½	0 38
Flints,	"	0 1 5 0	0 21	0 0 9	1 90
Gambier,	"	1 0 0 0	1 40	0 5 0½	12 62
Gamboge,	"	6 0 0 0	8 37	1 10 3	75 80
Ginseng, American, crude, ...	"	8 0 0 0	11 02	2 0 4	101 02
" " clarified, ...	box of 100 sq. ft.	0 1 5 0	0 21	0 0 10½	1 20
Glass, Window,		0 1 5 0	0 21	0 0 9	1 90
Glue,	picul	1 6 0 0	2 23	0 8 1	2019 66
Gold Thread, real,	catty	0 0 3 0	0 04	0 0 1½	37 86
" imitation,	"	0 6 0 0	0 84	0 3 1	7 58
Gum, Benjamin,	picul	0 6 0 0	0 84	0 3 1	7 58
" Oil of,	"	0 4 5 0	0 63	0 2 3½	5 67
" Dragon's Blood,	"	0 4 5 0	0 63	0 2 3½	5 67
" Myrrh,	"	0 4 5 0	0 63	0 2 3½	5 67
" Olibanum,	"	0 5 0 0	0 70	0 2 6½	6 30
Hides, Buffalo and Cow, ...	"	0 4 2 0	0 59	0 2 0½	5 29
" Rhinoceros,	"	0 2 5 0	0 35	0 1 3½	3 16
Horns, Buffalo,	"	0 2 5 0	0 35	0 1 3½	3 16
" Deer,	"	2 0 0 0	2 79	0 10 1	25 25
" Rhinoceros,	"	0 1 8 0	0 25	0 0 10½	2 28
Indigo, liquid,	"	0 6 5 0	0 91	0 3 3	8 20
Isinglass,	"	1 0 0 0	1 40	0 5 0½	12 62
Lacquered Ware,	"	0 4 2 0	0 59	0 4 0½	5 29
Leather,	"	0 5 0 0	0 70	0 3 0	3 82
Linen, fine, as Irish or Scotch, not exceeding 50 yds. long,	piece	0 2 0 0	0 28	0 1 2½	1 53
Linen, coarse, as Linen and Cot- ton, or Silk and Linen mix- tures, not exceeding 50 yds. long,	"	0 0 3 5	0 05	0 0 1½	4 42
Lucraban Seed,	picul	1 0 0 0	1 40	0 5 0½	12 62
Mace,	"	0 0 3 0	0 04	0 0 1½	0 38
Mangrove Bark,	"				
<i>Metals.</i>					
Copper, manufactured, as in Sheets, Rods, Nails...	"	1 5 0 0	2 09	0 7 6½	18 92
" unmanufactured, as in Slabs,	"	1 0 0 0	1 40	0 5 0½	12 62
" Yellow Metal Sheath- ing, and Nails, ...	"	0 9 0 0	1 25	0 4 6½	11 36
" Japan,	"	0 6 0 0	0 84	3 1	7 58
Iron, manufactured, as in Sheets Rods, Bars, Hoops...	"	0 1 2 5	0 17½	0 0 8	1 58
" unmanufactured as in Pigs, " Kentledge,	"	0 0 7 5	0 10½	0 0 4½	0 95
" Wire,	"	0 0 1 0	0 01½	0 0 0½	0 13
Lead, in Pigs,	"	0 2 5 0	0 35	0 1 3½	3 16
" in Sheets,	"	0 2 5 0	0 35	0 1 3½	3 16
Quicksilver,	"	0 5 5 0	0 77	0 2 9½	6 95
Spelter, (saleable only under Regulation appended,) ...	"	2 0 0 0	2 79	0 10 1	25 25
Steel,	"	0 2 5 0	0 35	0 1 3½	3 16
Tin,	"	0 2 5 0	0 35	0 1 3½	3 16
Tin Plates,	"	1 2 5 0	1 74	0 6 4	15 80
	"	0 4 0 0	0 56	0 2 0	5 05

ARTICLES OF IMPORT.	Per	Chinese Duties.	Duties in Spanish currency.	Duties per cent or lb. in English currency.	Duties per 100 kilograms in French currency.
		<i>T. M. C. C.</i>	<i>D. C.</i>	<i>£ s d.</i>	<i>Fr. Cent.</i>
Mother-o'-pearl Shell, ...	picul	0 2 0 0	0.28	0 1 0	2 52
Musical Boxes, ...	5 per cent.	<i>ad valorem</i>			
Mussels, dried, ...	picul	0 2 0 0	0.28	0 1 0	2 52
Nutmegs, ...	"	2 5 0 0	3.48	0 12 7½	31 60
Olives, unpickled, salted or pickled, ...	"	0 1 8 0	0.25	0 0 10½	2 28
Opium, ...	"	30 0 0 0	41.84	7 11 4½	378 66
Pepper, Black, ...	"	0 3 6 0	0.50	0 1 10	4 55
" White, ...	"	0 5 0 0	0.70	0 2 6½	6 30
Prawns, dried, ...	"	0 3 6 0	0.50	0 1 10	4 55
Patchuck, ...	"	0 6 0 0	0.84	0 3 1	7 58
Rattans, ...	"	0 1 5 0	0.21	0 0 9	1 90
Rose Maloca, ...	"	1 0 0 0	1.40	0 5 0½	12 62
Salt Fish, ...	"	0 1 8 0	0.25	0 0 10½	2 28
Saltpeter, (saleable only under Regulation appended,) ...	"	0 5 0 0	0.70	0 2 6½	6 30
Sandal-wood, ...	"	0 4 0 0	0.56	0 2 0	5 05
Sapan-wood, ...	"	0 1 0 0	0.14	0 0 6	1 28
Seahorse Teeth, ...	"	2 0 0 0	2.79	0 10 1	25 25
Sharks' Fins, black, ...	"	0 5 0 0	0.70	0 2 6½	6 30
" white, ...	"	1 5 0 0	2.09	0 7 6½	18 92
" Skins, ...	hundred	2 0 0 0	2.79	0 12 0	15 30
Silver Thread, real, ...	catty	1 3 0 0	1.81	0 6 8½	1641 00
" imitation, ...	"	0 0 3 0	0.04	0 0 1½	37 86
Sinews, Buffalo and Deer, ...	picul	0 5 5 0	0.77	0 2 9½	6 95
Skins, Fox, large, ...	each	0 1 5 0	0.21	0 0 10½	1 20
" small, ...	"	0 0 7 5	0.10½	0 0 5½	0 58
" Marten, ...	"	0 1 5 0	0.21	0 0 10½	1 20
" Sea Otter, ...	"	1 5 0 0	2.09	0 9 1	11 47
" Tiger and Leopard, ...	"	0 1 5 0	0.21	0 0 10½	1 20
" Beaver, ...	hundred	5 0 0 0	6.97	1 5 0	38 25
" Doe, Hare, and Rabbit, ...	"	0 5 0 0	0.70	0 3 0	3 82
" Squirrel, ...	"	0 5 0 0	0.70	0 3 0	3 82
" Land Otter, ...	"	2 0 0 0	2.79	0 12 0	15 30
" Raccoon, ...	"	2 0 0 0	2.79	0 12 0	15 30
Smalts, ...	picul	1 5 0 0	2.09	0 7 6½	18 92
Snuff, Foreign, ...	"	7 2 0 0	10.00	1 16 0½	90 90
Sticklac, ...	"	0 3 0 0	0.42	0 1 6½	3 79
Stockfish, ...	"	0 5 0 0	0.70	0 2 6½	6 30
Sulphur and Brimstone, (saleable only under Regulation appended,) ...	"	0 2 0 0	0.28	0 1 0	2 52
Telescopes, Spy and Opera Glasses, Looking Glasses, and Mirrors, ...	5 per cent.	<i>ad valorem</i>			
Tiger's Bones, ...	picul	1 5 5 0	2.12	0 7 8	19 57
<i>Timber.</i>					
Masts and Spars, hard-wood, not exceeding 40 ft., ...	each	4 0 0 0	5.58	1 4 0	30 60
Masts and Spars, hard-wood, not exceeding 60 ft., ...	"	6 0 0 0	8.37	1 16 0	45 90
Masts and Spars, hard-wood, exceeding 60 ft., ...	"	10 0 0 0	13.95	3 0 0	76 50
Masts and Spars, soft-wood, not exceeding 40 ft., ...	"	2 0 0 0	2.79	0 12 0	15 30
Masts and Spars, soft-wood, not exceeding 60 ft., ...	"	4 5 0 0	6.27	1 7 0	34 42
Masts and Spars, soft-wood, exceeding 60 ft., ...	"	6 5 0 0	9.07	1 19 0	49 72
Beams, hard-wood, not exceeding 26 ft. long, and under 12 in. square, ...	"	0 1 5 0	0.21	0 0 10½	1 20

ARTICLES OF IMPORT.	Per	Chinese Duties.	Duties in Spanish currency.	Duties per out or lb. in English currency.	Duties P 100 kilograms in French currency.
		T. M. C. C.	D. C.	£ s. d.	Fr. Cmt.
Planks, hard-wood, not exceeding 24 ft. long, 12 in. wide, and 3 in. thick, ...	hundred	3 5 0 0	4.88	1 1 0	26 77
Planks, hard-wood, not exceeding 16 ft. long, 12 in. wide, and 3 in. thick, ...	"	2 0 0 0	2.79	0 12 0	15 30
Planks, soft-wood, ... 1000	square feet	0 7 0 0	0.98	0 4 2½	5 35
" Teak, ...	cubic foot	0 0 3 5	0.05	0 0 2½	0 27
Tinder, ...	picul	0 3 5 0	0.49	0 1 9½	4 42
Tortoise Shell, ...	catty	0 2 5 0	0.35	0 1 3½	316 00
" broken, ...	"	0 0 7 2	0.10	0 0 4½	90 90
Umbrellas, ...	each	0 0 3 5	0.05	0 0 2½	0 27
Velvets, not exceeding 34 yds. long, ...	piece	0 1 8 0	0.25	0 1 0½	1 38
Watches, ...	pair	1 0 0 0	1.40	0 6 0	7 65
" émailées-à-perles, ...	"	4 5 0 0	6.27	1 7 0	34 42
Wax, Japan, ...	picul	0 6 5 0	0.91	0 3 1½	8 20
Woods, Camagon, ...	"	0 0 3 0	0.04	0 0 2	0 38
" Ebony, ...	"	0 1 5 0	0.21	0 0 9	1 90
" Garroo, ...	"	2 0 0 0	2.79	0 10 1	25 25
" Fragrant, ...	"	0 4 5 0	0.63	0 2 3½	5 67
" Kranjee, 35 feet long, 1 ft. 8 in. wide, and 1 foot thick, ...	each	0 8 0 0	1.12	0 4 10	6 11
" Laka, ...	picul	0 1 4 5	0.20	0 0 8½	1 83
" Red, ...	"	0 1 1 5	0.16	0 0 7	1 45
<i>Woollen Manufactures.</i>					
Blankets, ...	pair	0 2 0 0	0.28	0 1 2½	1 54
Broadcloth and Spanish Stripes, Habit and Medium Cloth, 51 @ 64 in. wide, ...	chang	0 1 2 0	0.17	0 0 8½	0 80
Long Ella, 31 in. wide, ...	"	0 0 4 5	0.06	0 0 3½	0 34
Camlets, English, 31 in. wide, ...	"	0 0 5 0	0.07	0 0 3½	0 38
" Dutch, 33 in. wide, ...	"	0 1 0 0	0.14	0 0 7½	0 76
" Imitation and Bombazettes, ...	"	0 0 3 5	0.05	0 0 2½	0 26
Cassimeers, Flannel, & Narrow Cloth, ...	"	0 0 4 0	0.05½	0 0 4½	0 31
Lastings, 31 in. wide, ...	"	0 0 5 0	0.07	0 0 3½	0 38
" Imitation and Orleans, 34 in. wide, ...	"	0 0 3 5	0.05	0 0 2½	0 26
Bunting, not exceeding 24 in. wide, and 40 yds. long, ...	piece	0 2 0 0	0.28	0 1 2½	1 54
Woollen and Cotton Mixtures, viz. Lustres, Plain and Brocaded, not exceeding 31 yds. long, ...	"	0 2 0 0	0.28	0 1 2½	1 54
Inferior Spanish Stripes, ...	chang	0 1 0 0	0.14	0 0 7½	0 76
Woollen Yarn, ...	picul	3 0 0 0	4.18	0 15 1½	87 86

Section 2.

TARIFF ON ARTICLES OF EXPORT.

ARTICLES OF EXPORT.	Per	Chinese Duties.	Duties in Spanish currency	Duties per cwt. or lb. in English currency.	Duties per 100 kilograms in French currency.
		T. M. C. C.	D. C.	£ s. d.	Fr. Cent.
Alum,	picul	0 0 4 5	0 06	0 0 2½	0 57
" (Green, or Copperas,	"	0 1 0 0	0 14	0 0 6	1 26
Aniseed Star,	"	0 5 0 0	0 70	0 2 6½	6 30
" Broken,	"	0 2 5 0	0 38	0 1 3	3 16
" Oil,	"	5 0 0 0	6 97	1 5 2½	63 11
Apricot Seeds, or Almonds,	"	0 4 5 9	0 63	0 2 3½	5 67
Arsenic,	"	0 4 5 0	0 63	0 2 3½	5 67
Artificial Flowers,	"	1 5 0 0	2 09	0 7 6½	18 92
Bamboo Ware,	"	0 7 5 0	1 04	0 3 9½	9 47
Bangles or Glass Armlets,	"	0 5 0 0	0 70	0 2 6½	6 30
Beans and Peas, (except from Niu-chwang and Tangchau.)	"	0 0 6 0	0 08	0 0 3	0 76
Bean Cake, (except from Niu- chwang and Tangchau.)	"	0 0 3 5	0 06	0 0 1½	0 45
Bone and Horn Ware,	"	1 5 0 0	2 09	0 7 6½	18 92
Brass Buttons,	"	3 0 0 0	4 18	0 15 1½	37 86
" Foil,	"	1 5 0 0	2 09	0 7 6½	18 92
" Ware,	"	1 0 0 0	1 40	0 5 0½	12 62
" Wire,	"	1 1 5 0	1 61	0 5 9½	14 52
Camphor,	"	0 7 5 0	1 04	0 3 9½	9 47
Cane,	thousand	0 5 0 0	0 70	0 3 0	3 82
Cantharides,	picul	2 0 0 0	2 79	0 10 1	25 25
Capoor Cutchery,	"	0 3 0 0	0 42	0 1 6½	3 79
Carpets and Druggets,	hundred	3 5 0 0	4 86	1 1 0	26 77
Cassia Ligna,	picul	0 6 0 0	0 84	0 3 1	7 58
" Buds,	"	0 8 0 0	1 12	0 4 1	10 10
" Twigs,	"	0 1 5 0	0 21	0 0 9	1 90
" Oil,	"	9 0 0 0	12 55	2 5 5	113 60
Castor Oil,	"	0 2 0 0	0 28	0 1 0	2 52
Chestnuts,	"	0 1 0 0	0 14	0 0 6	1 26
China Root,	"	0 1 3 0	0 18	0 0 7½	1 64
Chinaware, fine,	"	0 9 0 0	1 25	0 4 6½	11 36
" coarse,	"	0 4 5 0	0 63	0 2 3½	5 67
Cinnabar,	"	0 7 5 0	1 04	0 3 9½	9 47
Clothing, Cotton,	"	1 5 0 0	2 09	0 7 6½	18 92
" Silk,	"	10 0 0 0	13 95	2 10 4½	126 22
Coal,	"	0 0 4 0	0 05½	0 0 2	0 50
Coir,	"	0 1 0 0	0 14	0 0 6	1 26
Copper Ore,	"	0 5 0 0	0 70	0 2 6½	6 30
" Sheathing, old,	"	0 5 0 0	0 70	0 2 6½	6 30
" and Pewter Ware,	"	1 1 5 0	1 61	0 5 9	14 52
Corals, false,	"	0 3 5 0	0 49	0 1 9½	4 42
Cotton, raw,	"	0 3 5 0	0 49	0 1 9½	4 42
" Rags,	"	0 0 4 5	0 06	0 0 2½	0 57
Cow Bezoar,	catty	0 3 6 0	0 50	0 1 10	454 50
Crackers, Fireworks,	picul	0 5 0 0	0 70	0 2 6½	6 30
Cubebs,	"	1 5 0 0	2 09	0 7 6½	18 92
Curiosities, Antiques,	5 per cent. ad valorem				
Dates, Black,	picul	0 1 5 0	0 21	0 0 9	1 90
" Red,	"	0 0 9 0	0 12½	0 0 5½	1 13
Dye, Green,	catty	0 8 0 0	1 12	0 4 1	1010 00
Eggs, preserved,	thousand	0 3 5 0	0 49	0 1 11½	2 68
Fans, Feather,	hundred	0 7 5 0	1 04	0 4 4½	5 78
" Paper,	"	0 0 4 5	0 06	0 0 3½	0 34
" Palm Leaf, trimmed,	thousand	0 3 6 0	0 50	0 2 0½	2 75
" untrimmed,	"	0 2 0 0	0 28	0 1 2½	1 54
Felt Cuttings,	picul	0 1 0 0	0 14	0 0 6	1 26
" Caps,	hundred	1 2 5 0	1 74	0 7 6	9 61

ARTICLES OF EXPORT.	Per	Chinese Duties.	Duties in Spanish currency	Duties per cent or lb. in English currency.	Duties in 100 kilograms in French currency.
		T. M. C. C.	D. G.	£ s. d.	Fr. Cent.
Fungus, or Agaric,	picul	0 6 0 0	0.84	0 3 1	7 58
Galangal,	"	0 1 0 0	0.14	0 0 6	1 28
Garlic,	"	0 0 3 5	0.05	0 0 1½	0 45
Ginseng, Native,	5 per cent.	ad valorem			
" Corean or Japan, 1st quality,	catty	0 5 0 0	0.70	0 2 6½	631 15
" do. do. 2d quality,	"	0 3 5 0	0.49	0 1 9½	442 05
Glass Beads,	picul	0 5 0 0	0.70	0 2 6½	6 30
" or Vitrified Ware,	"	0 5 0 0	0.70	0 2 6½	6 30
Grasscloth, fine,	"	2 5 0 0	3.48	0 12 7½	31 68
" coarse,	"	0 7 5 0	1.04	0 3 9½	9 47
Ground-nuts,	"	0 1 0 0	0.14	0 0 6	1 28
" Cake,	"	0 0 3 0	0.04	0 0 2	0 38
Gypsum, ground, or Plaster of Paris,	"	0 0 3 0	0.04	0 0 2	0 38
Hair, Camel's,	"	1 0 0 0	1.40	0 5 0½	12 62
" Goat's,	"	0 1 8 0	0.25	0 0 10½	2 28
Hams,	"	0 5 5 0	0.77	0 4 9½	6 95
Hartall, or Orpiment,	"	0 3 5 0	0.49	0 1 9½	4 42
Hemp,	"	0 3 5 0	0.49	0 1 9½	4 42
Honey,	"	0 9 0 0	1.25	0 4 6½	11 36
Horns, Deer's, young,	pair	0 9 0 0	1.25	0 5 4½	6 90
" old,	picul	1 3 5 0	1.87	0 6 9½	17 05
India Ink,	"	4 0 0 0	5.58	1 0 2	50 52
Indigo, dry,	"	1 0 0 0	1.40	0 5 0½	12 62
Ivory Ware,	catty	0 1 5 0	0.21	0 0 9	189 35
Joss-sticks,	picul	0 2 0 0	0.28	0 1 0	2 52
Kittysoles, or Paper Umbrellas,	hundred	0 5 0 0	0.70	0 3 0½	3 52
Lacquered Ware,	picul	1 0 0 0	1.40	0 5 0½	12 62
Lamp-wicks,	"	0 6 0 0	0.84	0 3 1	7 58
Lead, Red, (Minium),	"	0 3 5 0	0.49	0 1 9½	4 42
" White (Ceruse),	"	0 3 5 0	0.49	0 1 9½	4 42
" Yellow (Massicot),	"	0 3 5 0	0.49	0 1 9½	4 42
Leather articles, as Pouches, Purse,	"	1 5 0 0	2.09	0 7 6½	18 92
Leather, green,	"	1 8 0 0	2.50	0 9 2	22 73
Lichees,	"	0 2 0 0	0.28	0 1 0	2 52
Lily Flowers, dried,	"	0 2 7 0	0.38	0 1 4½	3 41
" Seeds or Lotus Nuts,	"	0 5 0 0	0.70	0 2 6½	6 30
Liquorice,	"	0 1 3 5	0.19	0 0 7½	1 71
Lung-ngan,	"	0 2 5 0	0.35	0 1 3½	3 16
" without the stone,	"	0 3 5 0	0.49	0 1 9½	4 42
Manure Cakes, or Poudrette,	"	0 0 9 0	0.12½	0 0 5½	1 13
Marble Slabs,	"	0 2 0 0	0.28	0 1 0	2 52
Mats of all kinds,	hundred	0 2 0 0	0.28	0 1 2½	1 53
Matting,	roll of 40 yds	0 2 0 0	0.28	0 1 2½	1 53
Melon Seeds,	picul	0 1 0 0	0.14	0 0 6	1 26
Mother-o'-pearl Ware,	catty	0 1 0 0	0.14	0 0 6	126 22
Mushrooms,	picul	1 5 0 0	2.09	0 7 6½	18 92
Musk,	catty	0 9 0 0	1.25	0 4 6½	1136 10
Nankeen & native Cotton Cloths,	picul	1 5 0 0	2.09	0 7 6½	18 92
Nutgalls,	"	0 5 0 0	0.70	0 2 6½	6 30
Oil, as Bean, Tea, Wood, Cotton, and Hemp Seed,	"	0 3 0 0	0.42	0 1 6½	3 79
Oiled Paper,	"	0 4 5 0	0.63	0 2 3½	5 67
Olive Seed,	"	0 3 0 0	0.42	0 1 6½	3 79
Oyster-shells, Sea-shells, ..	"	0 0 9 0	0.12½	0 0 5½	1 13
Paint, green,	"	0 4 5 0	0.63	0 2 3½	5 67
Palampores, or Cotton Bedquits,	hundred	2 7 5 0	3.53	0 16 6	21 08
Paper, 1st quality,	picul	0 7 0 0	0.98	0 3 6½	8 84
" 2d " " " " " " " " " "	"	0 4 0 0	0.56	0 2 0½	5 05
Pearls, false,	"	2 0 0 0	2.79	0 10 1	25 25
Peel, Orange,	"	0 3 0 0	0.42	0 1 6½	3 79
" Pumelo, 1st quality,	"	0 4 5 0	0.63	0 2 3½	5 67

ARTICLES OF EXPORT.	Per	Chinese Duties.	Duties in Spanish currency	Duties per cent or lb. in English currency.	Duties ¥ 100 Kilograms in French currency.
		T. M. C. C.	D. C.	£ s. d.	Fr. Cmt.
Peel, Pumelo, 2d quality, ..	picul	0 1 5 0	0 21	0 0 9	1 90
Peppermint Leaf,	"	0 1 0 0	0 14	0 0 6	1 28
Oil,	"	3 5 0 0	4 86	0 17 8	44 16
Pictures and Paintings, ..	each	0 1 0 0	0 14	0 0 7½	0 76
" on pith or rice paper,	hundred	0 1 0 0	0 14	0 0 7½	0 76
Pottery, Earthenware, ..	picul	0 0 5 0	0 07	0 0 3	0 64
Preserves, Comfits, and Sweetmeats,	"	0 5 0 0	0 70	0 2 6½	6 30
Rattans, Split,	"	0 2 5 0	0 35	0 1 3½	3 16
Rattan Ware,	"	0 3 0 0	0 42	0 1 6½	3 79
Rhubarb,	"	1 2 5 0	1 74	0 6 34	15 80
Rice or Paddy, Wheat, Millet, and other Grains, ..	"	0 1 0 0	0 14	0 0 6	1 26
Rugs of Hair or Skin, ..	each	0 0 9 0	0 12½	0 0 6½	0 69
Samshee,	picul	0 1 5 0	0 21	0 0 9	1 90
Sandal-wood Ware, ..	catty	0 1 0 0	0 14	0 0 6	126 22
Seaweed,	picul	0 1 5 0	0 21	0 0 9	1 90
Sesamum Seed,	"	0 1 3 5	0 19	0 0 7½	1 71
Shoes and Boots, leather or satin, straw,	100 pairs	3 0 0 0	4 18	0 18 1	22 98
Silk, Raw and Thrown, ..	picul	0 1 8 0	0 25	0 1 0½	1 38
" Yellow, from Ss'chuen, ..	"	10 0 0 0	13 95	2 10 4½	126 22
" Reeled from dupions, ..	"	7 0 0 0	9 76	1 15 3½	86 40
" Wild Raw,	"	5 0 0 0	6 97	1 5 2½	63 11
" Refuse,	"	2 5 0 0	3 48	0 12 7½	31 60
" Cocoons,	"	1 0 0 0	1 40	0 5 0½	12 62
" Floss, Canton,	"	3 0 0 0	4 18	0 15 1½	37 66
" from other provinces	"	4 3 0 0	6 00	1 1 8½	54 30
" Ribbons and Thread, ..	"	10 0 0 0	13 95	2 10 4½	126 22
" Piece Goods,—Pongees, Shawls, Scarfs, Crape, Satin, Gauze, Velvet, & Embroidered Goods, ..	"	10 0 0 0	13 95	2 10 4½	126 22
" Piece Goods,—Ss'chuen and Shantung, ..	"	12 0 0 0	16 74	3 0 5½	151 67
Silk Tassels,	"	4 5 0 0	6 27	1 2 8½	56 82
" Caps,	hundred	10 0 0 0	13 95	2 10 4½	126 22
" and Cotton Mixtures, ..	picul	0 5 0 0	1 25	0 5 4½	6 68
Silver and Gold Ware, ..	"	5 5 0 0	7 67	1 7 8½	69 42
Snuff,	"	10 0 0 0	13 95	2 10 4½	126 22
Soy,	"	0 8 0 0	1 12	0 4 1	10 10
Straw Braid,	"	0 4 0 0	0 55	0 2 0	5 05
Sugar, Brown,	"	0 7 0 0	0 98	0 3 6½	8 84
" White,	"	0 1 2 0	0 17	0 0 6½	1 61
" Candy,	"	0 2 0 0	0 28	0 1 0	2 62
Tallow, Animal,	"	0 2 5 0	0 35	0 1 3½	3 16
" Vegetable,	"	0 2 0 0	0 28	0 1 0	2 62
Tee,	"	0 3 0 0	0 42	0 1 6½	3 79
Tin Foil,	"	2 5 0 0	3 48	0 12 7½	31 60
Tobacco, prepared, ..	"	1 2 5 0	1 74	0 6 3½	15 80
Leaf,	"	0 4 5 0	0 63	0 2 3½	5 67
Tortoise-shell Ware, ..	catty	0 1 5 0	0 21	0 0 9	1 90
Trunks, Leather,	picul	0 2 0 0	0 28	0 1 0	252 48
Turneria,	"	1 5 0 0	2 09	0 7 6½	18 92
Twine, Hemp, Canton, ..	"	0 1 0 0	0 14	0 0 6	1 26
" Soochow,	"	0 1 5 0	0 21	0 0 9	1 90
Turnips, salted,	"	0 5 0 0	0 70	0 2 6½	6 30
Varnish, or crude Lacquer, ..	"	0 1 8 0	0 25	0 0 10½	2 28
Vermicelli,	"	0 5 0 0	0 70	0 2 6½	6 30
Vermilion,	"	0 1 8 0	0 25	0 0 10½	2 28
Wax, white or Insect, ..	"	2 5 0 0	3 48	0 12 7½	31 66
Wood, Piles, Poles, and Joists, ..	each	1 5 0 0	2 09	0 7 6½	18 92
Wooden Ware,	picul	0 0 3 0	0 04	0 0 2	0 23
Wool,	"	1 1 5 0	1 61	0 5 9	14 62
"	"	0 3 5 0	0 49	0 1 9½	4 43

Section 3.

RULES RESPECTING TRADE AND DUES.

Note.—These rules, as well as the tariff, formed a part of the British, American and French supplementary treaties signed at Shanghai, in November, 1858. The copy here given is that from the British treaty, and is in no material respect different from the others.

RULE 1.—*Unenumerated Goods.*

ARTICLES not enumerated in the list of exports, but enumerated in the list of imports, when exported, will pay the amount of duty set against them in the list of imports; and similarly, articles not enumerated in the list of imports, but enumerated in the list of exports, when imported, will pay the amount of duty set against them in the list of exports.

Articles not enumerated in either list, nor in the list of duty-free goods, will pay an *ad valorem* duty of 5 per cent. calculated on their market value.

RULE 2.—*Duty-free Goods.*

Gold and silver bullion, foreign coins, flour, Indian meal, sago, biscuit, preserved meats and vegetables, cheese, butter, confectionary, foreign clothing, jewelry, plated-ware, perfumery, soap of all kinds, charcoal, firewood, candles (foreign), tobacco (foreign), cigars (foreign), wine, beer, spirits, household stores, ship's stores, personal baggage, stationery, carpeting, drugging, cutlery, foreign medicines, and glass and crystal-ware: the above pay no import or export duty, but if transported into the interior, will, with the exception of personal baggage, gold and silver bullion, and foreign coins, pay a transit duty at the rate of $2\frac{1}{2}$ per cent. *ad valorem*.

A freight or part freight of duty-free commodities (personal baggage, gold and silver bullion, and foreign coins, excepted) will render the vessel carrying them, though no other cargo be on board, liable to tonnage dues.

RULE 3.—*Contraband Goods.*

Import and export trade is alike prohibited in the following articles:—Gunpowder, shot, cannon, fowling-pieces, rifles, muskets, pistols, and all other munitions and implements of war; and salt.

RULE 4.—*Weights and Measures.*

In the calculations of the tariff, the weight of a picul of one hundred catties is held to be equal to one hundred and thirty-three and one third pounds avoirdupois; and the length of a *chang* of ten Chinese feet to be equal to one hundred and forty-one English inches.

One Chinese *chi* is held to equal fourteen and one tenth inches English; and four yards English, less three inches, to equal one *chang*.

RULE 5.—*Regarding certain Commodities heretofore Contraband.*

The restrictions affecting trade in opium, cash, grain, pulse, sulphur, brimstone, saltpeter, and spelter, are relaxed under the following conditions :—

1. Opium will henceforth pay thirty taels per picul import duty. The importer will sell it only at the port. It will be carried into the interior by Chinese only, and only as Chinese property ; the foreign trader will not be allowed to accompany it. The provisions of Art. IX. of the Treaty of Tientsin, by which British subjects are authorized to proceed into the interior with passports to trade, will not extend to it, nor will those of Art. XXVIII. of the same treaty, by which the transit dues are regulated ; the transit duties on it will be arranged as the Chinese Government sees fit ; nor in future revisions of the tariff is the same rule of revision to be applied to opium as to other goods.

2. *Copper Cash.*—The export of cash to any foreign port is prohibited, but it may be shipped at one of the open ports of China for another, on compliance with the following regulation :—The shipper shall give notice of the amount of cash he desires to ship, and the port of its destination, and shall bind himself, either by a bond with two sufficient sureties, or by depositing such other security as may be deemed by the Customs satisfactory, to return, within six months from the date of clearance, to the collector at the port of shipment, the certificate issued by him, with an acknowledgment thereon of the receipt of the cash at the port of destination, by the collector at that port, who shall affix his seal thereto ; or, failing the production of the certificate, to forfeit a sum equal in value to the cash shipped. Cash will pay no duty inwards or outwards ; but a freight, or part freight of cash, though no other cargo be on board, will render the vessel carrying it liable to pay tonnage-dues.

3. The export of rice and all other grain whatsoever, native or foreign, no matter where grown or whence imported, to any foreign port, is prohibited ; but these commodities may be carried by foreign merchants from one of the open ports of China to another, under the same conditions in respect to security as copper cash, on payment at the port of shipment of the duty specified in the tariff. No import duty will be leviable on rice or grain ; but a freight, or part freight of rice or grain, though no other cargo be on board, will render the vessel importing it liable to tonnage-dues.

4. *Pulse.*—The export of pulse and bean-cake from Tangchau and Niu-chwang, under the British flag is prohibited. From any other of the open ports they may be shipped, on payment of the tariff duty either to other ports of China, or to foreign countries.*

5. Saltpeter, sulphur, brimstone, and spelter, being munitions of war, shall not be imported, save at the requisition of the Chinese Government, or for sale to Chinese duly authorized to purchase them. No permit to land them will be issued until the Customs have proof that the necessary authority has been given to the purchaser. It shall not be lawful for

* This restriction was removed in March, 1862, and the Chinese authorities allow pulse and bean-cake henceforth to be exported from Tangchau and Niu-chwang, as from all other open ports in China, on the same conditions as are applied to other native produce.

British subjects to carry these commodities up the Yang-tse' kiang, or into any port other than those open to the seaboard, nor to accompany them into the interior on behalf of Chinese. They must be sold at the ports only, and except at the ports, they will be regarded as Chinese property.

Infractions of the conditions, as above set forth, under which trade in opium, cash, grain, pulse, saltpeter, brimstone, sulphur, and spelter, may be henceforward carried on, will be punishable by confiscation of all the goods concerned.

RULE 6.—*Liability of Vessels entering Port.*

For the prevention of misunderstanding, it is agreed that the term of twenty-four hours within which British vessels must be reported to the consul under Art. XXXVII. of the treaty of Tientsin, shall be understood to commence from the time a British vessel comes within the limits of the port; as, also, the term of forty-eight hours allowed her by Art. XXX. of the same treaty to remain in port without payment of tonnage-dues. The limits of the ports shall be defined by the Customs, with all consideration for the convenience of trade, compatible with due protection of the revenue; also the limits of the anchorages within which lading and discharging is permitted by the Customs; and the same shall be notified to the consuls for public information.

RULE 7.—*Transit Dues.*

It is agreed that Art. XXVIII. of the treaty of Tientsin shall be interpreted to declare the amounts of the transit dues legally leviable upon merchandise imported or exported by British subjects, to be one half of the tariff duties, except in the case of the duty-free goods liable to a transit duty of $2\frac{1}{2}$ per cent *ad valorem*, as provided in Article II. of these Rules. Merchandise shall be cleared of its transit dues under the following conditions:—

In the case of Imports.—Notice being given at the port of entry, from which the imports are to be forwarded inland, of the nature and quantity of the goods; the ship from which they have been landed; and the place inland to which they are bound, with all other necessary particulars, the collector of customs will, on due inspection made, and on receipt of the transit duty due, issue a transit-duty certificate. This must be produced at every barrier station and *viséd*. No further duty will be leviable upon imports so certificated, no matter how distant the place of their destination.

In the case of Exports.—Produce purchased by a British subject in the interior will be inspected and taken account of, at the first barrier it passes on its way to the port of shipment. A memorandum, showing the amount of the produce, and the port at which it is to be shipped, will be deposited there by the person in charge of the produce; he will then receive a certificate, which must be exhibited and *viséd* at every barrier on his way to the port of shipment. On the arrival of the produce at the barrier nearest the port, notice must be given to the Customs at that port, and the transit duties due thereon being paid, it will be passed. On exportation, the produce will pay the tariff duty.

Any attempt to pass goods inwards or outwards, otherwise than in compliance with the rule here laid down, will render them liable to confiscation.

Unauthorized sale, *in transitu*, of goods that have been entered as above for a port, will render them liable to confiscation. Any attempt to pass goods in excess of the quantity specified in the certificate, will render all the goods of the same denomination named in the certificate liable to confiscation. Permission to export produce, which cannot be proved to have paid its transit dues, will be refused by the Customs until the transit dues shall have been paid. The above being the arrangement agreed to regarding the transit dues which will thus be levied once and for all, the notification required under Art. XXVIII. of the treaty of Tientsin, for the information of British and Chinese subjects, is hereby dispensed with.

RULE 8.—*Foreign Trade under Passport.*

It is agreed that Art. IX. of the treaty of Tientsin shall not be interpreted as authorizing British subjects to enter the capital city of Peking for purposes of trade.

RULE 9.—*Abolition of the Meltage Fee.*

It is agreed that the percentage of one tael two mace, hitherto charged in excess of duty payments, to defray the expenses of melting by the Chinese government, shall be no longer levied on British subjects.

RULE 10.—*Collection of Duties under one System at all Ports.*

It being by treaty, at the option of the Chinese government to adopt what means appear to it best suited to protect its revenue accruing on British trade, it is agreed that one uniform system shall be enforced at every port.

The high officer appointed by the Chinese government to superintend foreign trade, will, accordingly, from time to time, either himself visit, or will send a deputy to visit the different ports. The said high officer will be at liberty of his own choice, and independently of the suggestion or nomination of any British authority, to select any British subject he may see fit to aid him in the administration of the customs revenue; in the prevention of smuggling; in the definition of port boundaries; or in discharging the duties of harbour-master; also in the distribution of lights, buoys, beacons, and the like, the maintenance of which shall be provided for out of the tonnage-dues.

The Chinese government will adopt what measures it shall find requisite to prevent smuggling upon the Yang-tsz' kiang, when that river shall be opened to trade.

(L.S.) ELGIN AND KINCARDINE.

<p>Seal of Chinese Plenipotentiaries.</p>

<p>Signatures of the five Chinese Plenipotentiaries.</p>
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一凡有違禁貨物如火藥大小彈子炮位大小鳥鎗並一切軍器等類及內地

第三款

三項仍毋庸議外其餘各貨皆每百兩之物完納稅銀二兩五錢

議外其餘該船裝載無論淺滿雖無別貨亦應完納船鈔倘運往內地除前
瑞器皿以上各物進出口通商各口皆准免稅除金銀外國銀錢行李毋庸
國酒家用雜物船用雜物行李紙張筆墨氈毯鐵刀利器外國自用藥料玻
鏡外國衣服金銀首飾攪銀器香水碱炭柴薪外國蠟燭外國煙絲煙葉外
一凡有金銀外國各等銀錢麵粟米粉砂穀米麵餅熟肉熟菜牛奶酥牛油蜜

第二款

應核估時價照值百抽五例征稅

出口稅則納稅倘有貨物名目進出口稅則均未載載又不在免稅之列者
照進口稅則納稅或有僅載出口稅則未載進口稅則者遇有進口亦皆照
一此次新定稅則凡有貨物僅載進口稅則未載出口稅則者遇有出口皆應

第一款

通商章程善後條約

令本商及同商二人聯名具呈保單俾或聽監督飭令另交結實信據方准此口運至彼口按照規定章程遵行該商赴關報明數目若干運往何口或仍不得按照別貨定稅 又銅錢不准運出外國惟通商中國各口准其以地關稅之例向與洋藥無涉其如何征稅聽憑中國辦理嗣後遇修改稅則送在天津條約第九條所載英民持照前往內地通商並二十八條所載內在地口銷賣一經離口即屬中國貨物祇准華商運入內地外國商人不得護商遵行納稅貿易洋藥准其進口議定每百觔納稅銀三十兩惟該商止准一向來洋藥銅錢米穀荳石硝磺白鉛等物例皆不准通商現定稍寬其禁聽

第五款

地爲一碼四碼欠三因制即合中國一丈均以此爲例

國一尺即英國十四因制又十分因制之一英國十二因制爲一幅地三幅磅零三分之一爲準中國一丈即十尺者以英國一百四十一因制爲準中國一凡有稅則內所算輕重長短中國一担即係一百觔者以英國一百三十三

第四款

食鹽以上各物概屬違禁不准販運進出口

十條所載英國貨船進口並未開艙欲行他往限貳日之內出口即不征收
一天津條約英國第三十七條所載船進口限壹日報領事官知照並照第三

第六款

等項止准照新章程買賣敢違此例所運貨物全罰入官

口外即係華民貨物與英商無涉以上洋藥銅錢米穀荳石荳餅硝磺白鉛
於通商海口銷售不准帶入長江並各內港亦不准代華商護送除在各海
進口該關未能查明該商實奉准買定不發單起貨此三項止准英國商人
鉛均爲軍前要物應由華官自行採辦進口或由華商特奉准買明文方准
出口其餘各口該商照稅則納稅仍可帶運出口及外國俱可 又硝磺白
淺滿均遵納船鈔 又荳石荳餅在登州牛莊兩口者英國商船不准裝載
則照銅錢一律辦理出口時照依稅則納稅其進口毋庸納稅至船載毋論
不分由何處進口者皆不准運出外國惟英國商人欲運往中華通商別口
口均免納稅至船載無論淺滿均納船鈔 又凡米穀等糧不拘內外土產
月繳回驗銷若過期不繳銷執照即按其錢貨原本照數罰繳入官其進出
給照別口監督於執照上註明收到字樣加蓋印信從給照之日起限六個

報等情將單內同類之貨全數入官所運各貨如無內地納稅實據應由海有違此例及業經報明指赴何口沿途私賣者各貨均罰入官倘有匿單少出口海關報完內地稅項方許過卡俟下船出口時再完出口之稅若進出該子口存留發給執照准其前往路上各子口查驗蓋戳至最後子口先赴貨到第一子口驗貨由送貨之人開單註明貨物若干應在何口卸貨呈交照驗蓋戳放行無論遠近均不重征至運貨出口之例凡英商民在內地置查驗確實照納內地稅項該關發給內地稅單該商應向沿途各子口呈單各貨該商應將該貨名目若干原裝何船進口應往內地何處各緣由報關海口免稅各物若進內地仍照每值百兩完稅銀貳兩伍錢此外運入內地爲斷惟第二欸所載免稅各貨除金銀外國銀錢行李三項毋庸議外其餘天津條約第二十八條所載內地稅餉之議現定出入稅則總以照納一半

第七欸

稅知會領事官曉諭本屬商民遵辦

各口界限並上下貨物之地均由海關妥爲定界既要便商更不得有礙收船鈔以上二條無論先後總以該船進口界限時刻起算以免參差爭論至

通商後察看情形任憑中國設法籌辦

號船塔表望樓等經費在於船鈔項下撥用至長江如何嚴防偷漏之處俟人指泊船隻及分設浮樁號船塔表望樓等事毋庸英官指薦干預其浮樁委員代辦任憑總理大臣邀請英國人幫辦稅務並嚴查漏稅判定口界派已議明各口畫一辦理是由總理外國通商事宜大臣或隨時親詣巡歷或一通商各口收稅如何嚴防偷漏自應由中國設法辦理條約業已載明然現

第十款

商毋庸另交領餉銀兩

一向例英商完納稅餉每百兩另交銀壹兩貳錢作為領餉之費嗣後裁撤英

第九款

通商之列

一天津條約英國第九條所載英民持照前往內地通商一款現議京都不在

第八款

實數明晰照復彼此出示曉布華英商民均得通悉一節可無庸議

定既惟一次納稅概不重征所有英國第二十八款所在經過處所應納銀關飭令完清內地關稅始行發單下貨出口以杜隱漏內地稅則經此次議

Section 4.

DESCRIPTION OF ARTICLES OF IMPORT.

Note.—This section is not intended to include a description of the numerous common or well known articles which are brought to China from Europe, chiefly for the consumption of foreigners, although many of them may be taken by the natives to a limited extent; but rather the peculiar commodities found in Asiatic trade. The Chinese names are those they bear in the tariff, and their pronunciation is uniformly given in the court dialect. In addition to the information got from foreign and native merchants, and otherwise in China, the report of the Commercial delegates attached to the French embassy of M. de Lagrené, in 1844, called *Etude Pratique du Commerce d'Exportation de la Chine*, edited by Natalis Rondot, has furnished a great number of useful data; Crawford's valuable Dictionary of the Indian Archipelago, and Fortune's three volumes, have also added to previous knowledge of the numerous articles designated in China markets as Straits Produce; and the information from all these works has been so incorporated with what was contained in former editions of the Guide, that no other than this general acknowledgment of their use can well be given.

AGAR-AGAR, 海藻 *hai tsai*, i.e. sea vegetable, includes all sorts of edible seaweed; the prepared agar-agar is called 凉菜 *liang tsai* or cooling vegetable; 石花菜 *shih hwa tsai* is the name of large sorts of seaweed. Agar-agar is the Malay name for the marine algal (*Plocaria* [*Fucus*] *tenax*) growing on the rocky shores of the Malayan islands, from which a glutinous jelly is prepared for the table by boiling; the name is likewise given to the jelly, and something very similar to it is also made from other species of seaweed, and applied to many useful purposes. The bamboo frame-work of lanterns is covered with paper saturated with this gum, which, when dried, is semi-transparent; it is also used by the paper and silk manufacturers as an ingredient in sizing some varieties of their goods. It is incomparable as a paste, and is moreover not liable to be eaten by insects. Over 150,000 piculs were imported into Shanghai alone in 1859, and the amount at other ports is not small; the average price there was \$6 per picul, but it is got for \$1½ to \$2 at the South. Its cheapness and admirable qualities as a paste render it worthy the attention of manufacturers in other countries.

AMBER, 琥珀 *hu peh*; false amber, 假琥珀 *kiá hu peh*. This fossil is found on the shores of several islands of the Indian Archipelago, and in small quantities on the coasts of China and Annam. A considerable part comes from the eastern shores of Africa. It was formerly much prized for ornaments and incense, and in China is still largely in demand for court beads. Transparent pieces of a lively yellowish-brown colour are the best, and if insects are imbedded in it, the value is greatly increased; if the pieces are foul and opaque, they are almost valueless. The price varies from \$8 to \$14 per catty, and higher, according to the quality and size of the pieces, the finest being carved into beads. False amber, made from copal and other gums, is brought from India, and sold in Canton at prices almost as great as those which the genuine article bears. The Chinese do not use amber for the mouth-pieces of pipes.

ASAFETIDA, 阿魏 *o wei*. This gum-resin is derived from the *Ferula asafetida* and *F. Persica*, two trees which grow in Persia. To obtain it, the roots, after the earth is removed, are covered with leaves to defend them from the sun; they are then cut off transversely, and the thick milky juice exudes and thickens on the wound; this when hard is scraped off and another section made, and the operation repeated until the root is exhausted. The gum is nauseous and bitter, and as it grows old loses its efficacy. The masses are composed of grains of a variegated colour; the best tint is a pale-red, having the grains nearly white; the odour should be penetrating, and when the piece is broken, the fracture ought to bear a marbled appearance. It is brought from Bombay, at the rate of \$15 a picul, and ranks high in the materia medica of the Chinese physician; it is exhibited in cholera, in syphilitic complaints and worms, and often forms an ingredient in the pills advertised to cure opium smokers.

BEEWAX, 黄腊 *huáng lāh*, or **蜜腊** *mìch lāh*; **磚腊** *chuen lāh*, or wax tiles, is the name for the large cakes. This article is brought from the Indian Archipelago, though the Chinese also collect it themselves. In the islands where the bees are found, the natives collect the wax in the forests, disregarding the honey, which is little in quantity and poor. Timor and Timorlaut produce a large amount; the Portuguese formerly sent away 20,000 piculs annually to China and India, at a prime cost of \$5 per picul. Wax is also brought from Borneo to Singapore for Chinese consumption. It is employed to some extent to incase the soft tallow of large candles, but more of it is used in making envelopes for pills, to conserve their ingredients, than for all other purposes. It is priced from \$25 to \$30 per picul.

Honey is seldom imported, but forms an article of internal trade; its quality is very good. Bees are not domesticated to much extent among the Chinese, and principally by the priests of country temples; the dry stems of a species of *Artemisia* are burned under the hives to smoke the insects, and put them into a temporary stupefaction, when taking out the honey. The price is about \$5 per picul.

BETEL-NUT, 檳榔 *pin lāng*, a word in imitation of the Malayan *pinang*; the leaf is called **蒟葉** *lau yeh*, and the husks **檳榔衣** *pin lāng í*. The leaf of the betel pepper (*Charica betle*), and the nut of the areca palm (*Areca catechu*), together constitute what is called **betel-nut**, and chewed so universally throughout the East. As an article of commerce, the nut is sold separately, under the name of "betel-nut," so called because used with the leaf of the betel pepper.

The habit of chewing this preparation has extended from the Malayan islands, where the palm grows, to the continent of Asia, and it is now used from the Red Sea to the Pacific Ocean. The areca nut is the fruit of a graceful palm, about six inches in diameter and thirty feet in height. The tree produces fruit from the age of five to twenty-five years. The nut, when the husk is taken off, resembles a nutmeg in shape and colour, but is a little larger and harder. The annual produce of a tree averages a hundred nuts or fourteen pounds, priced at about half a dollar a picul. The betel pepper is the vine which furnishes the leaf,

and for which alone it is grown. The flavour of the raw leaf is herba-ceous, with an aromatic, slightly pungent taste. It requires a rich soil, where there is abundance of water, and it is thought that the tree on which it is supported, affects the quality and quantity of the produce. The leaf is cultivated throughout the south of Kwángtung, that from the district of Háifung near Swatau, bearing the highest reputation. The masticatory is prepared for use in the same manner as in the Islands, except that the Chinese put a little sapan-wood dye in the lime or ouch to colour it vermillion.

When used, the nut is sliced thin, and wrapped in the raw pepper leaves, adding a dab of lime and gambier to give them a flavour. All classes and sexes of people among the Islanders are in the habit of chewing it, and medical observers say that it probably supplies a stimulus to the system, needed where the diet is spare and the houses damp. "It sweetens the breath," say those who use it, "rectifies and strengthens the stomach, and preserves the teeth;" it also gives the teeth, lips, and gums a dark red color, which is esteemed among the Malays a mark of beauty in proportion to its darkness. Persons of rank carry it prepared for use in ornamental cases, suspended from their girdles; a present of one of them is regarded as a mark of friendship, like that of a snuff-box with us. Among some of the Indian islanders, to refuse, on meeting a friend, to accept the betel-nut is regarded as a serious offence. So interwoven into their ideas has the practice become, that figures of beauty are taken from it, and a face is not accounted comely, unless the mouth and lips be stained of a dirty red. The Chinese dislike this colouring, and take pains to keep their teeth white.

The nuts, when prepared, are of two sorts; one is the nut alone, the other the nut cut into slices and boiled with a small quantity of gambier, and then dried. Another method of curing the nuts is to split and dry them hastily over a fire, or to dry them slowly without splitting. The dried nuts, with or without the husk, are imported from Java, Singapore, Siam, and Penang, at the rate of \$2 to \$3 per picul. The husks, worth about \$1.50, are used in dyeing. The areca also grows in Hainan, and large quantities find their way thence into the country. Betel-nut is not so extensively used in the south of China as in the Archipelago; and in the north it is rather a luxury, and chewed without the leaf.

BICHO-DA-MAR, *biche-de-mer*, or tripang, called 海參 *hái san*, i. e. sea-ginseng. The inferior is known as white, 白海參 *peh hái san*, and the superior as black bicho-de-mar, 黑海參 *keh hái san*, derived from at least two (and perhaps more) distinct species of *Holothuria*. This marine slug is found near all the islands from New Holland up to Sumatra and the gulf of Manasar, on most of those in the Pacific, but in the greatest abundance on small coral islands, especially to the south and east of the Súlú group down to the Arrow Islands and New Guinea. Macassar and Manila are entrepôts, but the foreign importation is chiefly in small vessels, which collect it from the natives. It is not unlike a big sausage, and has but few powers of locomotion, in common with other *Gasteropoda*; when the animal is captured, the short tentaculæ are folded up under its body. It is sometimes two feet long; but commonly from

four to ten inches, and its girth two or three. It is taken with the hand by the natives, who spear or dive for it; and after it has been gutted, dried, and smoked, it is fit for sale; about a thousand slugs make a picul. For a long time the Chinese were the sole carriers of the article, and are still the principal dealers in it, for their fastidious fancy for different species makes the trade hazardous for those ignorant of these distinctions. In the market, bicho-da-mar appears hard and rigid, and has a dirty brown colour caused by the smoking; when brought to the table it resembles pork-rind in colour and consistency. The Chinese cook it by itself, or with other dishes, and consume large quantities under the belief that it is an aphrodisiac. They divide it into about 30 varieties, priced from \$1½ to \$80 per picul, but one must be well acquainted with the article to distinguish them; the range of prices is \$30 for black, and \$12 to \$18 for white.

BIRDS-NESTS, called 燕窩 *yen wo*, i.e. swallow's nests, are assorted into the 官燕 *kwán yen*, i.e. mandarin nests, also called 白燕 *peh yen*, or white nests; 常燕 *cháng yen*, i.e. common nests, and the 毛燕 *máu yen*, i.e. hairy nests; otherwise known as 上中下 *sháng, chung, híd*, or clean, ordinary, and uncleaned. All kinds are brought principally from Java and Borneo, though they are found on most of the rocky islets of the Archipelago. The nest is the habitation of a small swift (*Collocalia brevirostris*), and is composed of a gelatinous substance elaborated by the bird from a species of seaweed (*Gelidium*) like carrageen moss, which it collects on the beach; externally, the nests resemble ill-cooked, fibrous isinglass, and are of a white colour, inclining to red; their thickness is little more than that of a silver spoon, and their weight from a quarter to half an ounce. When dry, they are brittle and wrinkled; the size is rather larger than a goose-egg; the dry, white, and clean are the most valuable. They are packed in bundles, with split rattans run through to preserve the shape.

The quality of the nests varies according to the situation and extent of the caves, and the time at which they are taken. The best specimens are procured before the young are fledged; if they contain eggs only, they are still valuable; but if the young are in the nests or have left them, the whole are then nearly worthless, being dark-coloured, streaked with blood, and intermixed with feathers and dirt. The nests are gathered in April, August, and December, nor is the harvest increased if the caves are neglected a year or two; the rajahs station guards near them to prevent intruders entering; and the Dutch seal up those in their territories. The best are found in deep damp caves, some on, and others a hundred miles from, the seaside. If not injured, they will continue to produce indefinitely. The sale of the nests is a monopoly with all the governments in whose dominions they are found. About fifty dried nests weigh a pound, or nearly seven thousand to a picul.

The method of procuring these nests somewhat resembles that of catching birds on the Orkney Isles. Some of the caves are so precipitous, that no one, but those accustomed to the employment from their youth, can obtain the nests, "being only approachable," says Crawford, "by a perpendicular descent of many hundred feet, by ladders of bamboo and rattan, over a sea rolling violently against the rocks. When the mouth of

the cave is attained, the perilous task of taking the nests must often be performed by torch-light, by penetrating into recesses of the rock, where the slightest slip would be instantly fatal to the adventurers, who see nothing below them, but the turbulent surf making its way into the chasms of the rock."

After they are obtained, they are separated from feathers and dirt, carefully dried in the shade and packed, and are then ready for the consumer. The Chinese are the only people that purchase them for their own use. The best, or white kind, is worth from \$2,500 to \$3,800 per picul, which is nearly twice its weight in silver; the middling kind is worth from \$1,200 to \$1,600; and the uncleaned, or those procured after fledging, \$150 or \$200 per picul. It is according to these three qualities that the duty is levied. A large part of the best kind is sent to Peking for the use of the court. This curious dish is an article of expensive luxury among the Chinese only; how they acquired the habit of using it is only less singular than their perseverance in it. They consider the birds-nest soup as a stimulant and tonic, but its best quality, perhaps, is its being perfectly harmless. Not a little labour is bestowed to render the nests fit for the table. Every feather, stick, and impurity is carefully removed by forceps and knives; and then, after being washed the nest is stewed into a jelly, like isinglass, which owes its taste mostly to the ingredients added to the dish. It was estimated by Crawford, in 1825, that about 243,000 pounds, at the value of \$1,263,570, were annually sent to China. Java alone sent about 27,000 lbs., mostly of the first quality, estimated at \$60,000. The present importation of all kinds can only be guessed at; 500 piculs were entered at Shanghai and Canton in 1860, but the entire import can hardly be less than 700 or 800 piculs annually. A few hundred pounds come from Caltura on the western coast of Ceylon, where Chinese have rented the caves from the government.

CAMPHOR, BAROOS, 冰片 *ping pien*, i.e. icicle flakes, is divided into clean or Malay, 清水片 *tsing ping pien*, and 坭冰片 *ni ping pien*, or refuse; other names are 龍腦 *lung náu*, or dragon's brains, and 波羅香 *po-lo hiang*, or Borneo perfume. This sort of camphor comes from Sumatra and Borneo, where the tree is confined to a small extent of country, and has been called Baroos from the seaport on the western coast of the former island, whence it was principally exported. The tree (*Dryobalanops camphora*) is a splendid tall plant, often five feet through, and found nowhere else in the world. The natives cut down the trees, split them open, and scrape out the gum in small pieces. The same trees produce camphor-oil, which is supposed to be camphor in a partially formed state. It is said that not a tenth of the trees yield gum, and before killing them it cannot be ascertained whether they are productive or not. It is divided into three sorts; the best is in crystallized lumps of a roseate white, occurring in the fissures of the tree as a concrete balsamic resin; the second is somewhat brownish, with but few sticks in it; while the last and worst is the refuse scrapings. All sorts are brought to China. The proportion between the prices of Malay and Chinese camphor is as 100 to 1 for the best; the former is rather more

fragrant, less volatile, and not so pungent as the latter, but it is altogether the fancy of the Chinese which causes the difference; and the high price they willingly pay for this curious production is a remarkable instance of the cost men will go to when they believe a thing will cure their ailments. It is a trifling article of trade, and most of it is smuggled. A crude strong-smelling liquid is obtained in Formosa, which is known as camphor-oil; it resembles varnish in colour, and is perhaps the sap of the common camphor tree, and different from that obtained in Borneo.

CARDAMOMS, 白荳蔻 *peh tau kau*, i.e. white nutmegs. There are several sorts of these, produced by various species of gingerworts in different parts of India, but the lesser and greater are the principal. The lesser cardamoms are obtained from a small shrub (*Elettaria cardamomum*) which grows on the coast of Malabar. The capsules have a yellow colour, a pungent smell, and when good are plump and broken with difficulty, possessing a sweet aromatic flavour; and the seeds, when chewed, impart a grateful warmth to the mouth. The greater cardamoms are the fruits of the *Amomum aromaticum* and of the *Alpinia galanga*, trees which grow in Cochin-China, India, and Java; the latter are called 高良薑子 *kau liang kiang tsz'*. The seeds are blackish, triangular, longer and larger than those of the other kind, and inferior in pungency and flavour.

There are several other sorts of seeds known in commerce under the common name of cardamoms, and prized for their aromatic qualities, which have been described by Mr Daniel Hanbury in the *Pharmaceutical Journal*. We have only room for a list of their names. The large round China cardamom, 草蔻 *tsau kau*, exhibits a mass of seeds within the pericarp of a light grayish brown. The slightly aromatic taste suggestive of thyme, induces the people to employ it as a stomachic. The small round China cardamom is more aromatic, seeds are granular on the surface, and the capsule containing them thin, light, yellowish externally and white within. This kind bears the same native name as the other, and is referred to *Amomum globosum*.

The ovoid China cardamom, 草菓 *tsau kwo*, is produced by the *Amomum medium*; the seeds are large, angular, hard, and striated, having a powerful and peculiar aromatic smell; the oval fruit is about 1½ inch long. The hairy China cardamom, 陽春砂 *yáng-chun shá*, is derived from the *Amomum villosum*, and grows in the district of Yángchun in Kwangtung; the brown pericarp is covered with short thick fleshy spines. The bitter seeded cardamom, 益智子 *yih ché tsz'*, is known by the myrrh-like taste of the small seeds.

Grains of Paradise, 砂仁 *shá jin*, also called 細砂荳 *si shá tau*, are the seeds of several species of *Amomum*, of which the *Amomum grana-paradisa* furnish the best. The *Amomum xanthioides* produces the *shá jin koh* 砂仁殼 or husks, which are used for the same purposes as the preceding. They have the same properties as cardamoms, and are found in India, Sz'chuen, and Arabia. The fruit is shaped like a grape, and contains three cells, each of which has a number of blackish

seeds prized for their stimulating quality. The pericarps are of little value by themselves; the seeds should fill them, be angular, rough, and odoriferous, and those selected as good be carefully dried and sealed, or they lose their virtue. They are occasionally used to give a pungent flavour to spirituous liquors, and still more in medicines, for all these species of aromatic plants are supposed by the natives to possess stimulating properties. The trade is in the hands of natives; the seeds cost from \$18 to \$25 taels per picul; those from Siam are the best.

CINNAMON, 肉桂 *jáu kwei*, i.e. fleshy cassia, from its greater thickness over the native bark. A little is imported into the northern provinces, where none of the cinnamon or cassia trees grow, from the Archipelago and the southern provinces. Cochinchina produces both these plants; and the true cinnamon has long been sent thence to China, both by vessels and travelling traders across the frontier. It also grows in Sin-chau, in the province of Kwángsé, not far from the former country.

CLOVES, 丁香 *ting hiáng*, or 子丁香 *tsi ting hiáng*. These are the unopened flowers of a large tree (*Caryophyllus aromaticus*), described by Rumphius, "as the most beautiful, the most elegant, and the most precious of all known trees," which grows in the Moluccas Islands, and is cultivated in Amboyna, Sumatra, Cayenne, and Mauritius. The tree is shaped like the myrtle, the bark is smooth, and the whole plant has a strong aromatic odour. When an exotic, the tree does not begin to bear till 15 years of age, but in its native soil, which is only on five islets west of Gilolo, it is usually productive at 7 or 8 years. The buds appear about the first of May, and during the four following months are perfected. They are green at first, then yellow, and finally change to a blood-red color. Soon after this the flowers open, and in three weeks the seeds are ripe. "It blossoms early," says Herbert, "but becomes exceedingly inconstant in complexion, from a virgin white varying into other colours; for in the morn it shows a pale green, in the meridian a distempered red, and sets in blackness. The cloves manifest themselves at the extremity of the branches, and in their growing evaporate such sense-ravishing odours, as if a compendium of nature's sweetest gums were there extracted and united." The buds are gathered very carefully by the hand in July and December, and are cured by placing them on hurdles over a slow fire for a few days, and afterwards in the sun, until they are thoroughly dried. The average produce for an orchard is 6 to 10 lbs. from each tree; some trees have been known to yield 150 lbs. in one season. Good cloves are large, heavy, have a hot acrid taste, and an oily feel. Those which have had the essential oil extracted are shriveled, and usually want the knob at the top. Their weight is often increased by setting the baskets near a vessel of water to absorb moisture. The Chinese use them sparingly for food, and consume a portion in distilling oil. The annual importation seldom reaches 3,000 piculs. Fancy baskets and other articles are often made from cloves, by fastening them together with wire.

MOTHER CLOVES, 母丁香 *mú ting hiáng*, are the fruit of the plant, and have been of late years imported from the Straits. The price averages from \$10 to \$12 per picul. They are used by the poor for much the same purposes as the flowers.

OIL OF CLOVES, 丁香油 *ting hiang yú*. This is procured by distilling cloves, and is sent from the Archipelago to Europe; the Chinese prepare it for their own use, but the export is a mere trifle. Adulteration can be proved by dropping into it spirits of wine, when the two will separate; or by setting it on fire, when the smell of any other oil will be detected. The pure is of a pale reddish-brown colour, which gradually becomes darker by age. It is heavier than water, of a fiery, acrid taste; and generally well made.

CLOCKS, 自鳴鐘 *ts' ming chung*. Wooden and brass clocks are now made by the Chinese workmen to a large extent, so much so as to diminish the importation to a trifle. A century or more ago, fine clocks, with complicated machinery for striking the hours, were bought by the hong-merchants for presents to high officials, but they are not now seen in these markets.

CANVAS and COTTON DUCK, 帆布 *fan pá*, or 哩布 *lí pá*. This is bought mostly for the foreign shipping, and its sale does not extend much among the Chinese. Canvas topsails are sometimes seen upon boats and junks in the south of China, as mat-sails are not so light and flexible; in the north, coarse native cotton cloth is everywhere used for sails by the Chinese on their own vessels.

COAL, 煤 *mei*; the native (classed among exports) is 土煤 *tú mei*. It has been worked by the Chinese for fuel for centuries, and they assert that it occurs in every province of the empire. Kwangtung, Chihli, and Kiangnan furnish large amounts; but as the workmen have no adequate machines for draining the mines, their excavations have not penetrated far below the surface, and the mineral is of an inferior quality. In Chihli and other northern provinces, good bituminous coal is the fuel for cooking and other uses, even among comparatively poor families; some of the seams opened near the Great Wall furnish excellent coal for steamers, but their position is remote from navigable rivers, and the cost of digging the coal great. The export and import of coal has already attained great importance.

COCHINEAL, 呀蘭米 *yá lán mí*. The insect (*Coccus cacti*) has been materially improved by culture, and the article is now divided into wild and domesticated; the latter being collected thrice in a year. In selecting cochineal, care should be taken that the color has not been occasioned by art. The best sort is "large, plump, dry, and of a silver white color on the surface." A watery infusion dyes scarlet; an alcoholic produces a deep crimson; while an alkaline gives a deep purple color. The largest part of the importation is at Canton, where the dyers have learned its excellence over the native dyes.

COIR, 梭 *tsung*; the fibre from the cocoanut is called 椰衣 *yé í*. Most of the coir used by the Chinese is made from the bark of the *tsung* or hemp-palm (*Chamærops*), a most useful tree found throughout the southern provinces. It is thirty feet or more in height, and furnishes a quantity of bark annually. The loose bark is stripped off in large sheets from the trunk of the tree, and when steeped in water the fibres separate in short wiry threads, of a dark brown color. It is the material from

which the Chinese make mats, brooms, cordage of all sizes up to cables, rain-cloaks, sandals, hats, trunks, brushes for block-printing, and other articles. The price for the prepared coir is about \$4 per picul. In the Archipelago the *gomuti* or *gjo*, as this substance is called by the Malays, is collected in Borneo and elsewhere from the *Borassus gomuti*, for cordage and similar purposes. The thread there sells at \$1.50 or \$2 per picul; and is considered rather superior to the Chinese product. The coconut coir is not much used where these two trees grow, for they furnish a fibre of longer thread.

CORAL; the precious red is called 珊瑚 *shān hú*; 石花 *shí huā*, is a name for common white coral. Various sorts are brought from Manila, where it comes from the Samar Is. and the Bisayas, and from the western coast of Sumatra, Singapore, and India. The black is the most prized, but the fine red is more common and useful; it is wrought into official buttons and beads, and the fine specimens sell for high prices. The manufacture of ear-rings, finger-rings, and other ornaments, consumes the inferior sort, which is priced at \$20 to \$100 per picul, according to the density, color, and size of the pieces. The fine is worth from \$1500 to \$3300 per picul, and when worked up is rated much higher. A string of 108 beads sometimes sells for \$800 or \$1000, and a large ball of fine color for \$100. Large pieces of white branch coral and madrepores are also sought for to adorn the grotesque plants and fancy rockwork in native houses and gardens. In former years, considerable quantities were imported from the Mediterranean, via England; and fine pieces of red, which are not often found in the Indian Seas, still find a good market.

CORALS, false, 假珊瑚 *kiá shān-hú*, and 土珊瑚 *tú shān-hú*. False coral beads are made from resinous matters mixed with red coloring dyes, surrounding a center of tin-foil and gum. A few boxes of a picul each are sent to India. The consumption in China is very great. The price is about \$10 per catty.

CORDAGE, Manila, 羅呂宋 *shing, Lü-sung*; most of it is taken to Shanghai, from the Philippines, and chiefly for consumption among foreign ships.

CORNELIANS or *agates*; the beads are 瑪瑙珠 *má náu chú*, and the pieces 瑪瑙石片 *má náu shí pién*; the color is the distinctive difference between cornelians and agates. These are brought chiefly from Bombay, to which place they come from Rajpepla in Guzerat, not far from the city of Broach. They are brought in the rough, and also manufactured into beads; and neither sort has heretofore usually passed through the custom-house. The Chinese make ankle-rings, ear-rings, armlets, snuff-bottles, beads, &c., from these stones, some of which are beautiful specimens of manufacture.

COTTON, 棉花 *mien huá*; the chief varieties are, Bombay, 軟花 *yuen huá*, or soft bales; Bengal 硬花 *kang huá*, or hard bales; Madras, 方包 *fáng páu*, or square bales; Palembang, 舊江 *kiú kiang*. The average annual import into Canton for fourteen years up to 1856 was 244,629 bales, of which 171,000 bales were Bombay,

35,677 bales Bengal, and 37,752 bales Madras; in 1847 and 1848, there were about 5500 bales of native growth brought from Shanghai. In 1851 a failure in the native crops caused high prices to rule in the Canton market, and produced an import from India in 1852 of 409,213 bales; that of the following year, however, being smaller than since 1841, viz., 147,182 bales, showed that under ordinary circumstances consumption could not take off more than about the average of those fourteen years, which may be computed at 241,548 bales. The maximum consumption was in 1852, 303,711 bales; and the minimum 135,511 bales in 1854, when the influences of the rebellion were felt in all trades. Canton is the principal mart for foreign cotton, and the foregoing statistics may be taken as a criterion of the extent of the trade generally. The market of Amoy took off about 40,000 bales annually, but with few exceptions the supplies of that market were drawn from Canton. The average annual value of the trade, when it centred chiefly at Canton in 1856, was estimated at about $5\frac{1}{2}$ to 6 millions of dollars, exclusive of the duties, which amounted to about \$400,000. Cotton is always quoted in taels and mace in the prices-current.

Since 1854, when the disturbances in the province of Kwángtung so materially injured the prosperity of Cantou, and scattered the weavers and other mechanics by the destruction of Fuhshan, the consumption of Indian cotton has materially diminished. Its place has been partly supplied by an increased use of English yarn, and raw cotton has again been brought from Shanghai. In 1859, the imports into Canton were 101,184 bales; in 1860, they increased to 199,178 bales; and fell in 1861 to 94,108 bales. During the year 1862 only 12,489 bales were imported, and part of this stock still unsold has been sent to England in consequence of the great increase of price there, and all supplies from India have ceased. To supply the regular demand at Canton, cotton has been brought from Shanghai and Ningpo to a great extent; the latter sort has proved to be of superior quality, and is calculated to take the place of the Bombay staple. The high prices lately ruling in England and the United States has stimulated the Chinese in the central provinces to supply raw cotton; and if the weavers in the south learn to use their own produce, the import from India may gradually be diverted from China. The amount of cotton grown and consumed in China itself is so enormous, that the import is comparatively trifling; it could supply foreign countries to a vast extent, and the readiness with which a sudden demand has been supplied to the extent of 100,000 piculs shipped from these two ports indicates the quantity grown. The import of Indian cotton at Amoy has diminished from 40,000 bales to less than half that quantity; and the deficiency there and at Swatow is likely to be supplied from the same quarter. Cotton is grown over all parts of China, though of different degrees of fineness and length of staple; that cultivated near Peking is used mostly for wadding, and not woven into cloth. In those regions the plant does not often grow above ten inches, and in the plains of Kiangnan it does not attain the size of the American plant. It has been the difficulty and expense of transportation from one part of China to another which has hitherto prevented the people using their own product.

COTTON PIECE GOODS, 布 *pú*. The names given in the tariff are here enumerated:—grey longcloths and domestics 原色布 *yuen sít*

pú; jeans and white longcloths 白色布 *peh síh pú*; plain piece goods 無花布 *wú hwá pú*; drills and twilled piece goods 斜文布 *sié wan pú*; dyed, figured piece goods 有花色布 *yú hwá síh pú*; brocades, fancy white 白提花布 *peh tí hwá pú*; shirtings, white spotted 白點花布 *peh tien hwá pú*; chintzes and prints 印花布 *yín hwá pú*; cambrics 縐紗布 *kiá shá pú*; muslins are also called 洋紗 *yáng shá*; damasks 緞布 *tuóu pú*; quiltings or dimities, 柳條布 *liú tiú pú*; gingham 毛布 *máu pú*; handkerchiefs 手帕 *shau peh*; fustians 回絨 *hwui jung*; velveteens 花剪絨 *hwá tsien jung*. The staples of these fabrics are grey and white shirtings from England, drills and sheetings from the United States. In 1845, Canton was the great mart for all these staples, but since then the port of Shanghai has gradually and naturally drawn the trade away from its southern competitor; the great consuming districts of such fabrics are in the provinces bordering upon the Yang-tsz' and the northern provinces of Shensi, Shansi, and Chihli, which are now supplied by Europeans taking goods there direct, so that the consumption in Shanghai in ordinary times will be reduced to one-half or one-third what it was before. Five or six years ago Shanghai annually took 1½ million pieces of grey, and 500,000 pieces white shirtings, 300,000 pieces drillings, and 100,000 pieces sheetings. Canton has of late years consumed about 400,000 *pcs.* grey, and 75,000 *pcs.* white shirtings, 500,000 *pcs.* drillings, and 310,000 *pcs.* sheetings and jeans. Amoy takes off nearly 100,000 *pcs.* grey and white shirtings annually, and Fuhchau lately has consumed about 25,000 pieces. The demand at Tientsin for cotton goods has rapidly developed, and bids fair to attain an important amount. In the season ending April 1st 1862, the sales of grey and white shirtings and T-cloths were 1,298,950 *pcs.*, 108,560 American drills and sheetings, and 190,440 *pcs.* of colored cottons of other sorts. These foreign cottons are taken chiefly in the maritime provinces, and still only form a small proportion to the amount of native manufactures throughout the empire. *Chintzes* have been greatly overdone during the last few years; the China markets can only take off a very limited quantity. *Handkerchiefs* have likewise been overdone, and there is no appearance of any increase to consumption. Gingham, velveteens, pulicates, satteens, and every kind of fancy goods, have been repeatedly tried, but they do not take with the people, and are not likely to; one reason being, that silks are more elegant and durable, and the style of dress among the Chinese allows no light fabric.

COTTON YARN 棉紗 *mien shá*; Cotton Thread, **棉線** *mien sien*. This article comes from England, the import from the United States, which in 1844 amounted to 1500 bales, having quite ceased. The consumption of this article has steadily increased during the last ten years, but not very rapidly. In 1845 the importation did not exceed 6000 bales, while in 1852 it reached 16,000 bales; in 1853, only 14,000 bales were imported, but this may be partly accounted for by the effects of political occurrences at Amoy. Assortments of Nos. 16 to 24 and Nos.

18 to 32 are the most saleable; the extent and value of the trade may be estimated at 45,000 piculs annually, at \$25 a picul, say \$1,125,906. Canton can take off 10,000 to 11,000 bales, and Amoy 4 to 5000 bales. In 1861, the import of yarn at Swatow was about 7500 piculs; in 1862, 5310 piculs. Both water and mule yarn are used, but very little of the latter. None is sold at Shanghai.

COW BEZOAR, 牛黃 *niú huáng*. The concretions found in the stomachs of goats were called bezoar in Persia, but the name is now used to designate those found in all ruminant animals. Whether the Chinese name, which ascribes them entirely to the ox, indicates their real origin always, is not known. The true is well counterfeited by pipe-clay and ox-gall. The genuine throws off only a small scale when a hot needle is thrust into it, and in hot water it remains unchanged; when rubbed on chalk, the trace should be yellow, but green on quick-lime. The cow bezoar brought from India is valued in this market at from \$20 to \$25 a catty. It is used as a paint and a drug, though the Chinese do not ascribe such wonderful properties in resisting and neutralizing poisons as the Hindoos. The native bezoar is chiefly found in northern China.

CUDBEAR, 紫粉 *ts' fan*, or carnation powder, is a dried crustaceous lichen, used in dyeing violet, purple, or crimson. It is procured from the *Lecanora parellus* or *tartarea*, which are collected in France and Sweden. Its colors are not durable when employed alone, and it is therefore used as a body to other expensive dyes, as indigo, cochineal, &c., to make them more lively. It is used but little by the Chinese.

CUTCH or Catechu, 兒茶 *urh chá*, was for a long time regarded as an earth, brought from Japan, whence its name *terra Japonica*. It is an astringent extract, obtained by boiling the brown heartwood of the *Acacia catechu*, a tree growing in Pegu and near the gulf of Cutch. It is imported from India. That brought from Bombay is friable, and of a red-brown color, and more hard and firm than that from Bengal. The cakes resemble chocolate, and when broken have a streaked appearance. Good cutch has a bright uniform color, a sweetish, astringent taste, melts in the mouth, and is free from any grittiness. But it varies considerably even when good; some kinds being ponderous and compact, others very light and friable, some more and others less astringent; which differences seem to result from the manner and the seasons in which it is obtained. There is some confusion between this article and gambier, both being similar in appearance and uses; the latter article is the largest import. The Chinese use it as a brown dye and medicine, and people whose employment injures their feet, sometimes rub it on the skin to harden it. The value varies from \$4 to \$5 per picul.

CUTLERY, 鐵刀利器 *tieh táu, lí k'í*, as scissors, knives. The consumption of knives extends almost wholly in the cheapest sorts; but there is reason to expect an increase. There is no duty on them, and the native manufacture is inferior and unhandy.

DAMMER, or Damar 吧嗎油 *pá má yú*. This Malay name for the resinous sap which exudes from trees, is applied in commerce to that which comes from a species of *Dipteracea* in Borneo and Sumatra, chiefly a sort

of Vateria. There is a hard sort, found in big lumps under the trees or on their trunks, and in large quantities. It is mixed with a softer kind to make it less brittle, and is then used for paying seams in boats, and other wooden vessels. It is brought to China in native vessels, probably not to a very large amount, as the native oakum serves the same purpose. It can be obtained in Borneo for 50 cents per picul.

ELEPHANT'S TEETH, 象牙 *siáng yá*; the pieces are called **牙碎** *yá sui*. These are obtained at Zanzibar and other marts on the east coast of Africa, and imported into China from Bombay; but the best and largest part is brought from Siam. A good deal of ivory finds its way direct from Burmah, and not a little of a cheaper sort comes from northern Siberia, collected from fossil remains. The tusks should be chosen without flaws, solid, and white; for if cracked or broken at the point, or decayed inside, they are less valuable. The largest and best weigh from 5 to 8 to a picul, and decrease in size to 25 in a picul; a large sound tusk often sells for \$300 and upwards.

FEATHERS; kingfisher's, 翠毛 *tsui máu*; peacock's, **孔雀** *kung tsioh*. These two are the only kinds mentioned in the tariff, but others are imported, as heron's, turkey's, parrot's, argus and other pheasants'. The beautiful plumage of the kingfisher is employed in making a sort of feather mosaic, which is highly admired for its iridescent hues. The tails of the peacock furnish the well-known insignia of office among the Chinese, besides which they are consumed in other ways, in theatrical dresses, toys, &c. The manufacture of fans requires great quantities, and of every kind of the finest sorts. Most of them come from the Archipelago and Malaysia.

FISHMAWS, 魚肚 *yü tú*. These are the stomachs of sharks, and are collected at the same time as the fins by the fishermen of the Archipelago and Persian seas. They are of a cartilaginous nature, and yellowish color; they are cured by stretching them in the sun, and need only to be properly dried to fit them for the market. If they become damp, they soon decay, and are then worthless. They are worth about \$40 a picul.

FISH-SKINS, 魚皮 *yü pí*, are the cartilaginous dried skins of the **龍豚魚** *lung-tun yü*, which seems to be a sort of sturgeon. They are used for food.

FLINTS, 火石 *ho shih*, i. e. fire-stone, are brought from England in the rough, sometimes as ballast. They are used in tinder boxes, and in the glass manufactories. The importation is gradually increasing. The Chinese obtain true flint somewhere in their country, but they are not skilled in cleaving it into convenient shapes.

GLASSWARE, 玻璃水晶器 *po-li shui-ting ki*; window-glass, **玻璃片** *po-li pien*. Fifty years ago, broken glassware was a considerable import at Canton, and a little is still brought, but the Chinese now make much of their own glassware. They have known how to make glass and other vitreous compounds probably since A.D. 200, but their consumption is still limited, and only a small proportion of dwellings are lighted with glass-windows. The manufacture of glassware is even

more limited. Crystal and Bohemian ware, window-glass, and domestic glassware, are all imported to some extent. Colored glass is also manufactured at Canton, in panes, toys and lamp-globes, and the demand and assortment have both increased within ten years.

GAMBIER, 檳榔膏 *pin lang kiau*, i. e. betel-nut jelly, from its common use in chewing with that article. This is sometimes confounded with cutch, and the properties and uses of the two are similar. Gambier is obtained by boiling the leaves of a vine (*Uncaria gambier*), for five or six hours, until a strong decoction is formed. They are then taken out and strained above the caldron. The extract is boiled almost to dryness, when it is cooled and the water drawn off; a soapy substance remains, which is dried and cut up as it is wanted. It is of a brownish yellow color, sweetish and astringent. Most of the importation goes to Shanghai from Singapore, for dyeing cottons and hemp. The color is at first an ochre yellow, which soon changes to a dirty brown. It is also used to tan leather, the proportion of tannin being seven or eight times that in oak bark.

GAMBOGE, 藤黃 *tang huáng*, i. e. rattan yellow, from the notion that it is derived from the rattan. In the former tariff, gamboge was reckoned among the exports, but none now goes abroad. The name is derived from Kamboja, the country which chiefly produces the tree, regarded as a species of *Garcinia*, though other plants furnish a similar gum. It is the inspissated sap of the tree, and is made into rolls for export, chiefly in Siam. If when rubbed upon the wet nail, the color be a bright lemon and no grittiness be felt, it is good; when burned, the flame is white, and the ash gray; the fracture is vitreous; it is tasteless and nearly inodorous. The Chinese use it as a paint, paying about \$20 a picul.

GINSENG, a word derived from the native name 人參 *jín-san*; clarified is 揀淨參鬚的 *kien-ting san sü tih*, crude is 洋參鬚 *yáng san sü*; the native is called 關東人參 *kwán-tung jín-san*, or that from beyond the Great Wall; the tariff also distinguishes the Korean 高麗 *káu-li*, and the Japanese. The American article is the dried root of the *Panax quinquefolia*, and it is probable that it is a different species from the Chinese plant, which is obtained in Manchuria and the wilds north of Corea. All the ginseng collected in the empire is imperial property, and a quantity is annually sold to faithful subjects, who are willing to pay almost its weight in gold for a remedy believed to have great virtues. The roots are about the size and length of a man's little finger, and when chewed have a mucilaginous sweetness; if good, they will snap when broken. They should be sound, firm, and free from worm-holes. The clarified is rendered translucent by steaming, skinning, and drying the fresh roots. The crude is the natural dried root. The Chinese prefer that which comes from their own woods, even when they can see no difference. In both countries it is a wild plant, and all efforts to cultivate it have failed. Clarified ginseng varies from \$80 to \$120 a picul; the crude, from \$35 to \$70 a picul; five per cent. is allowed for loss in weight on this article.

GLUE, 皮膠 *pi kidu*, is a manufacture of the Chinese. It is made from cow-hides by boiling to a jelly, but is not so tenacious as the Irish. It comes to market in rectangular strips a foot long. Some of it goes to India at about \$10 per picul.

GOLD THREAD, 金線 *kin sien*, divided into **真** *chin* or real, and **假** *kia* or imitation. It is used in embroidering caps, purses, shoes, ladies' dresses, and other similar objects. The quantity imported is large; but being of great value in little bulk, much of it is not reported in the trade returns.

GUMS.—Besides the gum-resins enumerated in the tariff, a few others are occasionally brought, as gum arabic, copal, gum animi, and rosin; damar and gamboge also properly come under this designation.

Benzoin or Benjamin, 安息香 *ngán sít hiáng*, i. e. the quieting perfume. This balsam is the concrete juice of the *Styrax benzoin*, which is cultivated in Borneo and Sumatra, in a rich moist soil. When the plants are seven years old, an incision is made in the bark, and the gum is carefully scraped off for three years. This first gathering is called *head*; the brown and inferior, produced during the next eight or ten seasons, is called *belly*; the tree is then cut down, and all the gum scraped from the fragments is *foot*. The first quality varies in price at the emporia from \$50 to \$100 per picul; the second from \$25 to \$55; and the worst from \$8 to \$20 per picul. The gum is brought from the interior in large cakes, which require to be softened by boiling before they are packed; care should be taken to free them from external impurities. Good benzoin is full of clear, light coloured spots, and when broken exhibits almond-like portions whiter than the rest; leaves, sticks, and bark are mingled with the inferior or opaque brown sorts. It is almost tasteless, but when rubbed or heated gives off an extremely agreeable odour.

Oil of Benjamin, 安息油 *ngán sít yú*, is a fragrant oil brought from India for use by apothecaries in the preparation of ointments and plasters. It is not made from benzoin, and has obtained its name from the resemblance in smell.

Olibanum, 乳香 *jü hiáng*, i. e. milk perfume; **桃乳** *táu jü*, i. e. peach milk, is a term for the best sort. This is the frankincense or *libanos* of the ancients, and is used in China for burning in temples and houses in religious worship. It is collected by incision from the *Bonwellia serrata* and *glabra*, and perhaps too from other species. There are two principal sorts—the Arabian, which is obtained from Africa, and the Indian, all of which is taken from Bombay and Calcutta to other countries. The drops of the best are very brittle, of a light yellow, varying to red or brown, opaque or semi-transparent, sticky and splintery when broken. The inferior is a dirty grey, and mixed with impurities. It has a balsamic smell, a sharpish bitter taste, and when chewed adheres to the teeth, and gives the saliva a milky colour. It burns with a pleasant fragrance and much smoke, leaving a black ash. It is not often badly adulterated. The boxes each contain one cwt. Olibanum is valued at about 10 taels per picul, and is imported to the extent of 1,200 to 2,000 piculs annually, chiefly for medicinal uses as a powder to purify wounds, or in plasters and decoctions.

Myrrh, 沒藥 *moh yoh*, in imitation of the Arabic name *murr*. This balsam is brought from Bombay, and is obtained by incision from the *Balsamodendron myrrha*. That which comes to China is not the same article as the Arabian, being quite opaque, of a blackish red colour, greasy fracture, and softens by the heat of the hand. It has an acrid, warm, and bitter taste. The pieces ought to be clear, semi-translucent, and unctuous, but it has usually other gums mixed with it. Loureiro says the berries of the *Laurus myrrha* afford a kind of reddish oil of the odor of myrrh, which is used in Cochinchina for purifying ulcers, and supposes the East Indian myrrh is obtained from it. The price varies from \$4 to \$12 per picul, and the importation occasionally reaches 200 piculs. Its uses are similar to those of olibanum.

Dragon's Blood, 血竭 *hiueh kiek*, or **龍涎香** *lung sien hiang*, i. e. dragon-spittle perfume. This is the dry resinous substance which covers the fruit of the *Calamus draco*, a sort of rattan growing in Sumatra, and is obtained by beating the fruit in little baskets. The good is in drops, of a bright crimson colour when powdered, and semi-transparent to the light. The tears are usually the firmest, and the most resinous and pure. If it is black when powdered, or very friable, it is inferior. It is often adulterated with other gums. The genuine melts readily and burns wholly away, is scarcely soluble in water, but fluent in alcohol. Its uses are various in medicine, painting, varnishing, and other arts. The best comes to this market from Singapore in reeds, selling at \$15 to \$35 per picul.

Bellium is obtained from the *Balsamodendron Africanum* and *B. Roxburghii*, growing in India, but that which comes to China is only another name for an inferior sort of myrrh. Both of them are probably much adulterated in this part of the world, compared with pure myrrh.

HIDES; cow-hides 生牛皮 *sang niú pí*; rhinoceros **犀皮** *si pí*. The skin of the rhinoceros is employed in medicine. The cow and horse furnish most of the heavy leather used, and the hides from Szechuen are the best. Raw and cured hides are both largely used in the manufacture of saddles and other articles, heavy harness, and in the various necessities of farmer's life.

HORNS; buffalo's 牛角 *niú kioh*; deer's **鹿角** *luh kioh*; rhinoceros, **犀角** *si kioh*. The horns of buffaloes and oxen form the largest part of the import.

Deer's horns, 鹿茸 *luh jung*, divided into old **老** *láu*, and young **嫩** *nuan*, form an article of export. Their medicinal properties as a stimulant in nervous ailments, and for internal complaints, call for all the young horns; the old ones are not so good for these purposes, but are useful in working up into ware.

Rhinoceros.—The best sort of rhinoceros' horns comes from Siam and Cochinchina, and sell at times for \$300 apiece. An inferior sort comes from India, of which some probably are from Sumatra and southern Africa, which sell for \$30 and upwards apiece. The Chinese carve the finest pieces into elegant cups, cornucopias, &c.; but most of the importation is used as a medicine, it being in repute as an antidote to poisons,

and also as a tonic, derived apparently from an idea prevalent in Chinese therapeutics that what comes from a strong animal must give strength. Its decoction is given to women just before parturition and to frightened children. The bones of elephants and tigers are imported, and probably of other animals besides those here mentioned, for manufacturing purposes; none are directly used as fertilizers. Tiger's bones 虎骨 *hú kú*, are specially mentioned in the tariff, for they are thought to partake and impart somewhat of the spirit of the animal, and are therefore taken as a medicine. Persons selling these relics sometimes parade through the streets with the skeleton of a tiger on their backs. A decoction of tiger's bones, deer's horns, and tortoise-shell, is administered to patients in feeble health.

ISINGLASS or fish-glue 魚膠 *yú kiáu*, is made from the sounds and noses of fishes, among which two species of *Polynemus*, or bynni carp, are caught in the Ganges for this purpose. It is prepared in thin diaphanous sheets, and used in the manufacture of India ink, and water colors for painting on porcelain, and largely in the silk trade to give a lustrous surface and sizing. The importation is trifling. It was the Chinese in Calcutta who first showed the natives there how to prepare the glue from this fish.

LEATHER 熟牛皮 *shuh niú pí*, has lately been largely imported for the use of foreigners. Enameled or glazed leather is coming into use among the people for belts.

LINEN, 蘇布 *sú pá*, or 竹布 *chuh pá*; the latter name is most current at Canton; known as fine 細 *si*; and coarse 粗 *tsú*. This article is almost entirely purchased by the foreign community, nor does its importation increase. The Chinese wear no under garments, strictly so called; and their own grasscloth is cheaper than foreign linen.

LUCRABAU SEED, (improperly Lucrabau) 大楓子 *ta fung tsz'*, are the seeds of a species of *Chaulmoogra*, which comes from Siam, and are used by the Chinese as a remedy for leprosy, in mild cases of which they effect a cure. The powdered oily nucleus of the seed is administered in doses of a drachm twice a day for four months, and the expressed oil occasionally rubbed on the skin. The seeds are nearly an inch long, consisting of a hard woody outer shell, to whose surface the pulp or rind adheres, and two or three seeds often stick together. The oily albumen incloses heart-shaped leafy cotyledons.

MACE, 豆蔻花 *tau kau hwd* or 玉菓花 *yuh kwo hwd*. This is the reticulated arillus of the nutmeg, *Myristica moschata*, whose properties it has in a less degree. Good mace is horny and oily, red when gathered, but turns to an orange when sprinkled with salt water and dried. It has a pleasant, aromatic odour, with a pungent, bitterish taste. It is packed in bales, and care is requisite that it be not too dry or too wet, as both alike injure it. There is an inferior kind of mace got from a wild nutmeg found in Malabar, which externally resembles the true. It has a resinous taste, and is but slightly aromatic. Mace has nearly disappeared from this market within the last few years.

MANGROVE BARK 栲皮 *káu pí*. This dyestuff is chiefly carried to the north of China, where it is delivered for \$1 to \$1.50 per picul; Singapore and Siam furnish large amounts. The coarse cotton sails of native vessels are dyed brown with it, and considerable quantities are used by the tanners. (The *Rhizophora* or mangrove trees do not grow in China, and the name given to this bark is applied from its similarity to that of a native tree.)

MOTHER-O'-PEARL SHELLS 雲母殼 *yun má koh* or 海珠殼 *hái chú koh*, are brought to this market from the islands of the Pacific and Sulu seas, the Arrow Islands near New Guinea, and the Bisaya Islands near the Philippines. It is a small trade, and does not increase much, owing to the scarcity of suitable sound shells. There are seven qualities of naker, the best of which comes from the *Avicula perliere*; species of the *Haliotis*, *Nautilus*, and *Unio*, also supply it. Large thick shells, seven or eight inches across, are the best, and those should be chosen of which the naker or inner surface is not discolored, decayed, or fractured. Good specimens of the dark colored shells, in which the naker is almost black, are also sought after, and prized according to their blackness.

METALS. The consumption of metals from abroad depends very much on their price, rather than on a need which must be supplied; when high, the native mines furnish some of them cheaper. The Chinese have mines of lead, quicksilver, iron, calamine, tin, and copper.

Copper; the sheets are 銅片 *tung pien*, and the rods, 銅條 *tung tiú*; slabs 銅磚 *tung chuen*; yellow metal 黃皮銅 *huáng pí tung*; nails, 黃銅釘 *huáng tung tīng*; Japan copper 日本銅 *jih-pun tung*. South American copper is brought to this market, but is scarcely ever landed; much of that in slabs is sent on to India, and that in sheets, rods, and bolts is used by the foreign shipping. The Chinese in a few instances sheath their vessels with copper; the Siamese and Cochinese often do so.

Iron; sheet iron is called 鐵板 *tieh pan*; iron rod 鐵條 *tieh tiaú*; iron wire 鐵絲 *tieh sī*; hoop iron 鐵符 *tieh fú*; iron pigs 鐵磚 *tieh chuen*; kentledge 商船厭載鐵 *shāng chuen yāh-tsi tieh*. Bar iron from 1 to 3 inches wide, and square and round rod of half an inch less, are the common sizes. Bar is worth from \$1.80 to \$2.60 per picul; nail rod from \$4½ to \$4¾; wire from \$7 to 8; and hoop about \$4 per picul. The demand for iron is more uniform than for any other metal, and doubtless it is the convenient shapes in which it is imported that induce the Chinese to take it.

Lead, 黑鉛 *hēi yuen*; the pigs are 鉛塊 *yuen kwai*; the sheets 鉛片 *yuen pien*. The price varies from \$7.50 to \$9 per picul. Lead, comparatively speaking, is scarce in Asia and in the Indian islands. The annual import has fallen from 40,000 piculs ten years ago, to 10,000 piculs at present, the greatest part of which comes from England. The American importation is trifling, but usually bears a higher price. The lining of camphor boxes, tea-chests, and canisters, consumes a large

proportion of the pig lead brought to this market. The mode of making the sheet is very simple. Two tiles, covered with several thicknesses of paper, are placed near the melted lead, and the workman, lifting the upper one with its edge resting on the lower tile or stone, pours the liquid metal on the under one, and instantly drops the one he holds in his hand; the sheets are made into the requisite form by soldering. The knack of dropping the upper one in such a manner as to make the sheet of a uniform thickness is the only difficult part of the operation.

Quicksilver, 水銀 shui yin, is brought from Europe in iron flasks; the mines in California now more than supply the demand in China, which is altogether not over 12,000 flasks annually, each about 75 lbs. at a total value of \$400,000. Quicksilver is frequently adulterated with lead or tin; the fraud can be detected by boiling it to evaporation, when the other metals will remain; if the quantity of extraneous metal is great, the quicksilver feels greasy, and cleaves to the skin, while the pure runs off clean. Its market value is very fluctuating. In 1790 it was priced at 35 to 40 taels per picul; in 1848 at \$130; and a thousand piculs of native metal were exported at nearly that average a year or two before; and in 1855 it was worth \$60. Quicksilver has long been known among the Chinese, and when the foreign article exceeds \$100 per picul, it can be then exported. Cinnabar mines are opened in the western provinces, and the pure metal is collected in Kweichow and Honan, brought to market in stone jars, or inclosed in the joints of bamboo.

Spelter, 白鉛 pah yuen. This is the sink of commerce, used in the manufacture of brass; it is in plates of half an inch thick of a whitish-blue color, which sell at \$5½ to \$6 per picul. There was formerly a monopoly of native spelter or tutanague (which the tariff still partially retains by a special regulation), so that no foreigner could either buy or sell it; because it was supposed to be necessary in the manufacture of ordnance, and the mines were imperial property. The consumption has decreased to a trifle.

Steel, 鋼 káng. Both Swedish and English rough or blistered steel are the kinds usually imported. The importation increased for several years, but latterly the demand has fallen off. The Chinese are not skilled in making steel articles, and their cutlery is a burlesque on the name.

Tin, 錫 sih, or 洋錫 yáng sih. It occurs in both Chihlí and Húnán, but the metal is not abundant in China. Banca tin is cast into ingots weighing from 20 to 60 lbs.; that of a superior quality is called 'Banca tin,' while the inferior, known as 'Straits' tin,' is obtained chiefly in the Malayan peninsula; and is not unfrequently adulterated with lead by the Chinese miners.

Tin Plates, 馬口鐵 má kau tiéh, or 錫片 sih pien, are brought from England and America in boxes containing 112 lbs., or from 80 to 120 plates, which sell for about \$6 to \$7 per box. The demand for them is steady but not large.

MUSICAL BOXES, 八音琴 pah yin kin, i. e. eight-sounding lyre. The desire for these articles among the Chinese has yet to be developed,

and efforts have been made in Europe to arrange Chinese tunes upon them, but with indifferent success.

MUSSELS, dried, 淡菜 *tan tedi*. This article comes from Siam, and consists chiefly of shell-fish, prawns, crawfish, and clams dried without much salt, whence the Chinese name of "fresh vegetable."

NUTMEGS, 玉菓 *yuh kwo* 荳蔻 *tau kau*; the cleaned are 上等荳蔻 *shang tang tau kau*, and the uncleaned are 草蔻連殼 *tsau kau lien koh*. These are the nuts of the *Myristica moschata*, a native of the Banda isles, and cultivated at Singapore and other places. "The nutmeg," says Sir Thomas Herbert, "like trees most excellent, is not very lofty in height, scarce rising as high as the cherry; by some it is resembled to the peach, but varies in form of leaf and grain, and affects more compass. The nut is clothed with a defensive husk, like those of a baser quality, and resembles the thick rind of a walnut, but at full ripeness discovers her naked purity, and the mace chastely entwines (with a vermilion blush) her endeared fruit and sister, which hath a third coat, and both of them breathe out most pleasing smells. The mace in a few days (like choice beauties) by the sun's flames becomes tawny; yet in that complexion best pleases the rustic gatherer." Good trees will produce from ten to twelve pounds of nuts and mace annually, but the average of the trees in an orchard is 65 oz., or about two piculs to an acre. Nutmegs of a lightish-gray color, a strong, fragrant smell, an aromatic taste, oily and round, and of a firm texture, are the best. The holes made by insects are often neatly filled up, or the nuts are distilled for the oil, or digested in alcohol for the perfume, and then passed off as fresh; these deceptions can be ascertained by the inferior weight. They are dipped in lime-water to preserve them from worms or packed in layers of dry chunam. In commerce, nutmegs are divided into royal and queen, the former are of an oblong, and the latter of a round shape; the cultivated sort is also called female, and the wild, the male nutmeg.

OPIUM, 鴉片 *ya pien*, and 鴉片烟 *ya-pien yen*; or by an euphemism 洋藥 *yang yoh*, i. e. foreign medicine. It is also called 烟土 *yen tu*, 黑土 *heh tu*, or black earth; 黑貨 *heh ho*, the black article; Benares is called 姑塊 *ku ni* and 叶塊 *ieh ni*; Patna 公塊 *kung ni*, 新元 *sin yuen*, and 舊元 *kiu yuen*; Malwa, 白皮 *peh pi*; Turkey, 金塊 *kin ni*, 金花 *kin hwa*, and 金花紅 *kin hwa hung*; prepared opium 熟烟 *shuh yen* and 熟貨 *shuh ho*; these names are some of those used in the trade at Canton; others are employed at other ports. At Swatow, Patna is 烏土 *wu tu*, Malwa 紅土 *hung tu*; and Benares 罈土. The native is called 阿芙蓉 *o-fu-yung*, in the Chinese medical books. Opium is the concrete juice of the *Papaver somniferum*, cultivated in India and Turkey. The cultivation of it is a government monopoly in British India; in Malwa and other native states it is free, but the drug is subject to a transit duty of 400 rupees per chest to Bombay. That raised in Behar (called Patna in commerce) and Benares is superior to the Malwa, and both are preferred by the Chinese to the

Turkey opium, which has nearly ceased to be imported. Patna and Benares are put up in balls laid in poppy dust; Malwa comes in small cakes covered with poppy leaves, each chest containing about 140 balls of opium. Good opium is moderately firm in texture, capable of receiving an impression from the finger; of a dark yellow color when held in the light, but nearly black in the mass, with a strong narcotic smell, and free from grittiness. That produced in different countries varies considerably, and experience alone can determine the best article. The value increases for a short time by age; but this soon ceases to be the case, and Turkey opium in particular deteriorates unless carefully preserved from the air. Opium is adulterated with leaves, dirt, and other substances; if very soft it is not usually good.

The annual import of the drug during the last ten years has been 70,000 chests, which has been insufficient for the demand, and has stimulated the growth in China, so that between 20,000 and 30,000 chests are now prepared by native cultivators. The net revenue in India is about £4,000,000 a year, and the cost at present per chest to government is about 400 rupees. The growth there is soon to be extended, and the price cheapened, so that the Chinese opium shall be driven out of the market, which it is supposed can be done if the foreign be afforded at \$450 per chest; the average price during the past four years having been \$800 a chest. The total export of opium from India during the interval between 1798 to 1855 amounted to 1,197,041 chests, advancing from 4000 chests the first year to 78,854 the last, on which the Indian government received a total profit of upwards of £67,000,000; of these, about 180,000 chests were consumed in Malaysia. At Hankau, the native article is divided into 西土 *Sí-tu*, that grown in Shansi and Shensi; 南土 *Nán-tú*, that grown in Kweichau and Yunnan; and 川土 *Chuen-tú*, that from Sz'chuen; the prices of these three kinds ranged there from 25 taels to 20 taels for 8½ lbs. *av.* The poppy is also grown in Mongolia and northern China, Fuhkien and Húnan. The value of the foreign opium imported into China at present is nearly equal to that of the tea and raw silk exported.

The trade is now legalized under some restrictions given in the Regulations of Trade. The Chinese high officers long since perceived that their prohibitions against its use were chiefly productive of evil in the encouragement they gave to smuggling and training up desperate and lawless men, whose impunity against just punishment brought disrepute on all law; and when the proposition was made at Tientsin in 1858 to legalize the traffic, they made little real objection to the change. The use of the drug has extended throughout the empire, and its cheapness to smokers remote from the sea-coast is likely to greatly increase the consumption, and the attendant evils which have hitherto followed. The history of the efforts made by the rulers of this pagan people to resist the introduction of opium, because it was felt to be injurious to the morals, revenue and industry of their people, and their complete failure, forms one of the most instructive chapters in Chinese annals.

PEPPER, 胡椒 *hú tsíu*; divided into white 白 *peh*, and black 黑 *keh*; the former being the seed deprived of the dried flesh by soaking in water and rubbing in the hands. The pepper vine (*Piper nigrum*) grows

in Sumatra, Malacca, Borneo, Java, &c. The fruit is collected semi-annually; the vine bears when three years old, and continues to do so for about seven years more. As soon as the fruit has changed from a green to a red color, it is picked and put upon mats to dry, and afterwards separated from the fruit stalks, and when dried thoroughly is ready for market. Good, black pepper has a very pungent smell, an acrid and hot taste. The pepper from Penang and Sumatra is superior to that which comes from Java and Borneo; about a million and a half pounds are annually brought to China in foreign bottoms. Native vessels also bring a good deal. The Chinese use it as a tea in fevers, and probably to as great an extent as for a condiment. They have also two sorts of native pepper called 花椒 *huá tsidu*, derived from two species of *Zanthoxylum*, the *Z. piperitum* and *Z. alatum*, which are likewise used in the same way as the true spice. It has a peculiar aromatic taste due to the oleo-resin contained in the tubercles of the carpel.

PRAWNS, 蝦米 *hiá mǐ*, are exceedingly abundant throughout the maritime and fluviatile shores of China and Eastern Asia. They are imported from Siam as salt provision, dried, pickled, and salted, and chiefly used in making a condiment that is relished alone by natives.

PUNGTAI (or Bungtalai) SEEDS 大海子 *tá hái tsǐ*, are the fruits of a small tree (*a Nephelium?*) in Cambodia, belonging to the natural order of Sapindaceæ. They are brought from Siam, and appear in the market dark brown, deeply wrinkled, ovoid, and about an inch long; the dry, resinous-looking flesh covers the thin shell, and when macerated in water swells to a mucilaginous jelly, which is sweetened and eaten as a delicacy.

PITCHUCK, 木香 *muh hiáng*, is the fragrant and spicy root of a species of the thistle tribe (*Aucklandia costus*), growing wild in Cashmere, where it is collected by the natives under the name of *kooth*, and sent to Calcutta and Bombay. In color and smell it is not unlike rhubarb, becomes mucilaginous when chewed, and gives off a pleasant smoke. It is sometimes reduced to a powder and serves to preserve clothes against insects; or mixed with clay and fine sawdust, it is burned by the Chinese as incense in temples; but the greatest portion of the import is shaved into thin slips, and taken as a tonic and gentle stimulant in union with other simples.

RATTANS, 沙藤 *shá tang*, are the stalks of trailing palms or *Calami*, which are spinous, climbing plants with graceful foliage, found wild in the Malacca peninsula and islands of the Archipelago, but in the greatest perfection in the south of Borneo and in Sumatra. The sorts grow from 100 to 1200 feet in length according to the species, and when cut require only to be stripped of the epidermis, which is done by drawing the stem through a notch in a tree, then doubled and tied up in bundles containing a hundred each. Such as are black or discolored, or those from which the glazing flies off on being bent, should be rejected. Walking sticks are cut from the large kinds. Rattans are imported to the extent of 50,000 piculs annually in foreign bottoms, besides what are brought in native vessels; they are divided into Banjermassing and Straits, the latter comprising the inferior qualities from Sumatra and Malaysia.

ROSE MALOES, 蘇合油 *sí hoh yú*. This is a thick scented, gummy oil of the consistence of tar, obtained by pressure from beans, and called *gurmala* in Bombay; it is brought from Persia and Upper India to Bombay, and when good has a pearly appearance. It is used in making plasters among the Chinese, and frequently also as a purge.

SAGO, 西穀米 *sí kuh mí*, is the farina inside the stem of several species of palm, the *Metroxylon sago* and *Sagus lœvis* furnishing a large portion. The trees are cut down when about 15 years old, just before flowering, sawed into logs, and split down to the pith, when the pulp is taken out, beaten with mallets, and washed until only the mealy powder remains. The average produce of a tree is 700 lbs. or 13 bushels. The meal is cooked by baking. It is made ready by sewing it into bags made of the leaves of the tree, seven of which weigh about a picul; all the *sago tamping*, as these bags are called, is brought to Singapore for refining and granulating. This is done by mixing it with pure water, and rubbing the paste into little grains by forcing it through a sieve into an iron pan over a fire. When well cured it has a pearly lustre, is slightly reddish, and dissolves in hot water into a starch. The manufactories in Singapore annually prepare many thousands of piculs, but the import to China is a mere trifle.

SALTPETRE, 洋硝 *yáng siáu*, was formerly prohibited, and is still sold only under regulations, the Chinese being under the impression that foreigners exported it for making their powder; it is not common or cheap in the south part of the country. It is found in caves and other covered places in Sumatra, and taken thence to Singapore and China; but the greatest part of the import comes from India, where it is obtained by lixiviating the soil in nitre beds. The province of Chihlí also supplies large quantities of saltpetre; it effloresces on the surface of the ground, and is collected in an impure state by leeching, and afterwards purified.

SALT FISH, 鹹魚 *kien yü*, is an article chiefly used by foreigners. The preserved fish of the Chinese is usually stockfish; and this dry mode of curing saves them the expense of wood for barrels, and enables the dealers to store and furnish cured fish to people far in the interior cheaper than they otherwise could do.

SANDAL-WOOD, 檀香木 *tán hiáng muh*. This is the heart wood of the *Santalum album*, which grows wild in India, and of two other species found in Timur and other islands of the Indian and Pacific oceans. The tree resembles myrtle in size and appearance. The billets are, after felling, barked, and then buried until the outer wood is decayed or destroyed, leaving only the heart. The color varies from a light red to a dark yellow; the deepest color is the best. The best wood is near the roots. In choosing sandal-wood, the largest pieces, and those of firm texture, free from knots or cracks, of a sweet smell, should be selected. The best sandal-wood comes from the Malabar coast, and sells from \$10 to \$18 a picul; that brought from Timur is worth \$8 to \$10; while that found in the South Sea Islands, being small and knotty, is valued from \$3 to \$6. The chips also form another sort. The Chinese use sandal-wood to burn in their houses and temples, a large stick being often seen

in the incense jar before the shrine, slowly burning away, and filling the room with its grateful odor. The best pieces are carved into fancy articles, as fans, card-cases, boxes, &c., in the same style as the ivory ware. An oil is extracted from the wood, which is valued for its aromatic properties; it has the consistence of castor oil, is yellow and highly fragrant, and sinks in water.

SAPAN-WOOD 蘇木 *sú muh*. This is the wood of the *Cesalpinia sapan*, a tree which grows in Sumbawa, Luçon, and Siam, and has the same properties as the Brazil wood in an inferior degree. It is employed for its red dye, which is the best known to the Indian islanders. The cloth is put into the decoction and the color set with alum, and afterwards made more lively by washing it in potash-water and spirit. The inspissated dye is used to redden the lime eaten with betel-nut. Sapan-wood sells about \$2 per picul; large quantities are brought from Manila.

SEAHORSE TEETH, 海馬牙 *hai má yá*, are brought from California, Sitka, and other parts of Western America, and are used by the Chinese in the same manner as ivory. Under this term are also included the teeth and tusks of the walrus, sperm whale, and other cetaceous and phocine animals; but with the cessation of the whale fishery, the importation has dwindled to almost nothing.

SHARK'S FINS; white 白魚翅 *peh yü chí*; black 黑魚翅 *heh yü chí*; both are commonly known as 魷翅 *shá chí*. These fins are sought for from the Indian Ocean to the Sandwich Islands, but the chief supply is from Bombay and the Persian Gulf. They are fat and cartilaginous, and when cooked into soups, are esteemed by the Chinese as a stimulant and tonic. They should be thoroughly dried and kept from moisture. About five hundred fins are contained in a picul. The price is from \$6 to \$60 per picul. There seems to be little choice as to what species of shark furnish the fins, but those of a whitish color are valued higher than the black sort. Besides the cured fins and stomachs, the flesh of sharks, dog-fish, and rays of all kinds, form a common article of food among the people on the seacoast.

SHARK'S SKINS, 魷魚皮 *shá yü pí*, among which is that of the basking shark from the Ceylon seas, have always been introduced to a trifling extent, for making shagreen. The skin also serves to cover musical instruments, and pieces of it fastened together make the base of shuttlecocks. Snake's skins are tanned for the first named purpose, too, and are used more than the shark's; the 南蛇 *nán shé* and every other large species of serpent is taken, but a beautiful striped skin is most prized to adorn the guitar or mandolin. The 白蛇 *peh hwa shé*, or white striped snake's skin, worth about \$40 per picul, is sought after to cure rheumatism, flatulence, and general weakness. Snake's skins of the largest size are worth \$50 a picul, and shark's about \$8. The dried skins of a species of anaconda are brought from Hainan I., where the reptile is found; it is reduced to a powder when used a medicine.

SINews of the deer 鹿筋 *luh kin*; and the buffalo 牛筋 *niú kin*, are eaten by the Chinese under the impression that they are peculiarly strengthening. The latter are collected in the Archipelago and Siam,

by Chinese who know the tastes of their countrymen, and make shipments in small quantities. They are boiled with eggs, shrimps, &c., to the consistency of a stringy jelly, and eaten by invalids, chiefly as a restorative tonic.

SILVER-THREAD, 銀線 *yin sien*, is imported to a small extent for working in embroidery, in which the Chinese are very skillful.

SKINS AND FURS; sea otter, 海龍 *hai lung*, or 海虎 *hai hú*; fox, 狐狸 *hú lí*; raccoon, 貉獾 *koh kiuen*; beaver, 海騾 *hai lo*; sable, 貂皮 *tiáu pí*; tiger, 虎皮 *hú pí*; leopard, 豹皮 *páu pí*; doe, 麀皮 *yú pí*; hare and rabbit 兔皮 *tú pí*; squirrel, 灰鼠皮 *hwei shú pí*; ermine, 銀鼠皮 *yin shú pí*; wolverene? 川鼠 *chuen shú*; land otter, 獺皮 *táh pí*. Thirty years ago, the fur trade with China amounted to upwards of a million of dollars annually; but during the last ten years very few skins or furs have been imported coastwise. The amount carried into China over the northern frontier is large, though no account of the number can be obtained. Lamb-skins, both yeanned and unyeanned, sheep-skins, goat, cat, and squirrel furs, are much used in the north of China, and take the place of the padded cotton clothes of the southerners.

SMALTS, 洋清 *yáng tsing*, 大清 *tá tsing*, or 花桃清 *hwá tau tsing*, is an oxide of cobalt melted with silex and potash. The Chinese use it for painting on porcelain and glazed copper vessels, and in distemper; also in coloring glass. The consumption has never been great, but the demand is constant. There are mines of arsenical cobalt in the island of Hainan, and their produce is used in native glass manufactures, after having been roasted and pulverized.

SNUFF, 鼻烟 *pí yen*. The Chinese are fastidious about their snuff, and take it medicinally rather than as a luxury, so that the foreign sorts bear fancy prices. Sometimes the snuff is made the vehicle of introducing other medical agents into the system. A snuff-bottle is a part of a gentleman's dress; it holds a table-spoonful of the dust, which when taken, is placed on the thumb-nail with the ladle attached to the stopper. There is much choice in the selection of the bottles, and some of those carved from agate, opal, or jade, are among the most beautiful specimens of Chinese skill.

SOAP, 番靚 *fán kien*, is used sparingly by the Chinese, nor is it satisfactorily ascertained that they know how to make it; there is an imperfectly made article at Tientsin which is the nearest approach to it. That brought from India in cakes is a coarse, gritty substance, more like barilla than soap; it is largely used about Canton, and the importation is slowly extending. The Chinese have many poor substitutes for soap, and its free importation cannot fail to benefit. Perfumed and fancy soaps are taken, but the yellow common bar-soap forms the largest part of the import.

STICKLAC, 紫梗 *ts' kang*, has begun to be known in the market as a dye, but only to a limited extent; 450 piculs entered at Shanghai in 1859.

STOCKFISH, 柴魚 *chái yü* or **乾魚** *kien yü*. These are dried fish brought from Germany and England, cured without the use of salt. In appearance, when preserved, they resemble dried codfish. The quantity brought is small compared to what it was twenty years ago. The Chinese themselves cure immense quantities of fish in this way.

SULPHUR, 硫磺粉 *liú huáng fun*; brimstone, **硫磺** *liú huáng*. The island of Formosa furnishes some sulphur to the Chinese within their own borders, and they have used it for economic purposes from very early times. It can be obtained cheaper at Manila than collected in Formosa, and it is likely that the supply there, as elsewhere in China, has been chiefly from the Archipelago. It rates about \$8 per picul, and can only be legally sold to government agents. It is not much employed in medicine by itself, or mixed with other drugs.

TELESCOPES and spy-glasses, 千里鏡 *tsien lí king*; lorgnettes **雙眼千里鏡** *shuáng yen tsien lí king*; looking-glasses **掛鏡** *kuá king*; pier-glasses **穿衣鏡** *chuen í king*, or **掛屏** *kuá ping*. One half of the importation of these articles may be regarded as British property, and the other half (in some years, perhaps three-fifths) as French and Swiss. The consumption of spy-glasses and lorgnettes gradually increases as the country opens, but that of mirrors does not enlarge in proportion.

TIGER'S BONES, 虎骨 *hú kuh*. See *Horns*.

TIMBER or masts, 桅 *wei*; divided into hard wood **重木** *chung muh*; and soft wood, **輕木** *king muh*; beams **梁** *liáng*; planks **板** *pán*; teak **麻栗樹** *má lì shú*. Since the establishment of ship-yards and docks at the open ports, the timber trade has attained much importance. Oregon, Australia and Manila furnish excellent timber for making and repairing vessels and for house-building. Molave wood (*Vitex geniculata*) and other kinds come from Manila. Masts and planks to the value of \$500,000 were entered at Shanghai alone in 1859; and the importation into Tientsin from Hakodadi and Oregon has begun to diminish the high rates of the native timber. Its increased cheapness and accessibility will be a boon to the people in that part of China, where the land carriage on timber is so costly as to amount to a prohibition.

TINDER, 火絨 *ho jung*, is brought to be consumed in the tobacco pouches, which form a part of the dress of almost every man and woman in China; these pouches hold a steel and flint and other conveniences for smoking. The cottony substance growing between the trunk and the leaves of the coir palm (*Borassus gomuti*) is collected for tinder by the Malays. The Chinese use dried moxa, boleti and agarics for tinder, and mix the fibre with saltpetre.

TREASURE, 金銀洋錢 *kin yin yáng tsien*. The silver currency imported into China now consists chiefly of Mexican and Peruvian dollars, the Spanish having altogether ceased, and the coins of England, the United States, and India coming in small amounts.

Gold is received in the south from California and Australia, partly as a remittance, or as the savings of Chinese emigrants returning

home; the annual importation of this metal has never much exceeded \$1,000,000. Sovereigns, doubloons, double eagles and eagles, appear in small amounts; their market value is about 7 per cent. discount. Silver bullion in bars of 700 or 800 taels are imported from England, and silver ingots have also been received from San Francisco. Treasure in many forms is continually sent away, too, and if the opium trade extends, is likely to find its way out of the country as it did in 1840-48.

UMBRELLAS, 傘 *sán*, or 雨蓆 *yü ché*, of silk and cotton have latterly begun to supersede kittysols among the higher classes of natives; the manufacturers now import a little whale-bone for completing their own article; rattan is also used for the ribs. Silk umbrellas used to be made, costing from \$1 to \$3½ apiece for the South American markets. Common umbrellas have no connection in China with rank, as is the case in the Archipelago; the great parasol, carried in religious processions, or after Chinese officers, has a different name and is made of another shape.

VELVETS, 剪絨 *tién jung*, have always been in demand for ornamenting dresses; the Chinese had no similar fabric until it was imported, when they immediately began to imitate it.

WATCHES, 時辰鏢 *shí shín piáu*; set with pearls, 珠邊時辰鏢 *chú pien shí shín piáu*. Common watches have begun to be imitated by native workmen, who import the hair-springs, but their performances do not interfere much with the importation from Switzerland and France, which is continually increasing. The usage among the natives of wearing two watches when they can afford it, doubtless increases the demand.

WAX, Japan 日本蠟 *jih-pun lán*. This is the vegetable wax obtained from the seeds of the *Rhus succedaneum*, by crushing the ripe seeds, and then separating the tallow-like covering by heat. It is inferior to beeswax for purposes in the arts for which that has been employed.

WINE, beer, &c., 洋酒 *yáng tsú*. With the exception of a little cherry-brandy, and a few liquors now and then taken away by officials, all the wine, beer and spirits imported are consumed by foreigners; all attempts to introduce their use among the Chinese having failed—a result not at all to be regretted.

WOODS, camagon, 毛柿 *máu tsé*; ebony, 烏木 *wú muh*; garroo or aloes 沉香 *chín hiáng*; fragrant, 香柴 *hiáng chái*; kranjee 呀囉治木 *yá-lán-chí muh*; laka, 降香 *kiáng hiáng*; red-wood 紅木 *hung muh*. Besides the sorts mentioned here, small amounts of several other kinds are imported for consumption among the Chinese, as rosewood, amboyua or knot wood, kayabuco wood, yellow wood, dotchin wood, satin wood, &c. Their own forests furnish them with a large variety of fine woods for cabinet-work, and a good deal is brought across the western frontier.

Ebony is the heart wood of the *Diospyrus ebenus*, a tree growing in Mauritius and Ceylon, and of the *D. melanoxylon*, growing in Luçon, and other islands of the Archipelago. The best wood is of a jet black,

free from veins and bark, the texture compact, free from cracks and not worm-eaten. There are other kinds of wood resembling ebony in external appearance, which are often substituted for it, and the Chinese successfully practise staining *swán ché*, a kind of hard red wood, to resemble ebony. *Camagon* wood, as well as ebony, is derived from a species of *Diospyrus*, but is inferior. *Garroo*, or *gahru* wood is the *agila* or eagle-wood of commerce, the *Aquilaria Agallochum*, much prized for its perfume. The tree furnishes the best perfume when diseased, and the *aloes*-wood which is so much sought for, is the heart wood, while the *agila* or *calambak* is the timber. The Chinese reduce it to powder to mix with cedar dust and clay, in the manufacture of joss-sticks; and carve good pieces into beads on account of their fragrance. The tree grows throughout *Malaysia* especially in *Cochinchina*, and the *Laos* country, *Silhet* and *Assam*; and the fragrant wood is known all over *Asia*. This substance is the *aloes* or *lign aloes* of the Bible, and has no relationship to the drug known by that name. The tree is one of the largest in its native forests, and the wood is not prized in its ordinary state, being pale in color, light and inodorous. But as decay commences, it becomes gorged with a dark, resinous, aromatic juice, and is then eagerly sought after, and prized according to its weight and fragrance. In *Silhet*, the natives fell any trees they find, chop off the bark, and cut into the trunk until they observe dark colored veins, indicating the proximity of the odoriferous wood near the heart. In this manner the search is continued until all the resinous portions are cut out; the sound wood is so much less valuable that it is neglected. The trunk is sometimes buried in moist ground to hasten its decay and facilitate the extraction of the diseased part. There is, necessarily, a great difference in the quality of the drug, according as it is more or less charged with resin. The wood is of a deep brown color, slightly bitter in taste, and marked with many coarse veins, in which the resin lies; some specimens yield nearly 50 per cent. of soluble matter. The odor somewhat resembles *sandal-wood*, but our Biblical translators seem to have rendered the Hebrew *ahaloth* by *aloes*, from a notion that it smelled like that drug.

Laka wood is a native of *Sumatra* (the *Tanarius major*); the tree supplies a red colored wood used in dyeing and in pharmacy; it is worth about \$3 per picul in these markets. *Redwood* is brought from *Singapore* with *kranjee*, for building; the last is a hard wood, suitable for rudder posts, and is employed in junks; the former is a softer wood, susceptible of polish, liable to split, and suitable for furniture.

WOOLEN MANUFACTURES, viz., broadcloth and Spanish stripes 大呢 *tá ní* or 哆羅呢 *to-lo ní*; long-ella, 畢幾 *p'ih kí*; kerseymere, 小呢 *siáu ní*; blankets, 洋白氈 *yung peh chen* or 床氈 *chwing chen*; English camlets 羽絨 *yü shá*; Dutch camlets 羽緞 *yü tuán*; imitation camlets and bombazets 羽綢 *yü chau*; bunting 羽布 *yü pú*; inferior woollens and Spanish stripes 下等絨 *hiá tang jung*; flannel 番絨 *fán pa*; lastings 羽綾 *yü ling*; orleans 小羽綾 *siáu yü ling*; woolen and cotton mixtures 絨棉布 *jung mien pú*. The trade in woollens was formerly one of the important branches, and the annual consumption amounted to nearly a million sterling; the value

in 1834 is stated at £835,217, and at the beginning of this century the value of the export of tea to, and import of woollens from England, was not very far apart. Now the Chinese officials, who used to buy them, have either become too poor to purchase fine broadcloths, or else the fashions have changed. German cloths are repacked in England, so that all the importation comes in British ships. Long-ells are brought in bales of assorted colors or all scarlet,—this color being most sought after because it is deemed fortunate. Spanish stripes, broadcloths, and habit-cloths, are worn by the richer classes.

The trade in woollens, like that of cotton piece goods, is at present extending, as the opening of new ports brings them more within the reach of the people, but statistics are yet imperfect. At Canton the sales of long-ells are about 12,000 *pcs.*, and of other cloths nearly 20,000 *pcs.*; of camlets about 10,000 *pcs.*; miscellaneous, 23,000 *pcs.*; the consumption at this port will probably decrease in future owing to the openings on the Yangtze'. At Shanghai, the import in 1861, was Spanish stripes 37,097 *pcs.*; long-ells, 68,507 *pcs.*; camlets, 45,411 *pcs.*; habit cloths, &c., 5194 *pcs.*; other sorts, as blankets, bombazetts, or flannel, 48,384 *pcs.*; total value over 2½ millions of dollars. The largest portions of these goods went up the Yangtze'. The woollen trade at the three northern ports is proportionately less than that in cotton goods, for the custom of wearing padded cloths and furs diminishes the demand. At Fuhchau the consumption is trifling; some 5000 pieces of all sorts. The total value of the woollen trade in 1844 was estimated at \$1,375,000; in the season 1853 it was about \$740,000; and even less than that in 1855. It began to revive in 1859, when it was estimated to exceed two millions of taels, and in 1861, to reach nearly \$4,000,000. There is no steady demand for many of the miscellaneous fabrics, as flannels, blankets, kerseymere, bunting, bombazetts, mixtures, plaids, lastings, though many are constantly brought. Blankets and flannel are liked by the Cantonese, but their use does not extend. Russian woollens are common throughout the northern provinces, and are cheaper than English. It is highly probable that a gradual increase will take place in the total import of these manufactures, as the people north of the Yangtze' become familiar with them.

WOOLEN YARN, 絨線 *jung sien*, is difficult of sale, and has almost ceased to be brought; 241 piculs were imported in 1836-37, at \$100 per picul. The Chinese have learned to knit to a very little extent, but they have not learned to weave woollen cloth.

Section 5.

DESCRIPTION OF ARTICLES OF EXPORT.

ALUM, 白礬 *pek fán*, is exported to India and the Archipelago, where it is regarded as superior to the native product. About 75,000 piculs have been annually exported. It is found in argillaceous schist or *alum shale*, in the provinces of Ngánhwui, Húnán, and Chehkiáng, which finds its way chiefly to Ningpo and Shanghai; the markets of Swatau and Amoy also furnish large quantities drawn from neighboring districts. One mineral spring is mentioned which contains alum in solution. The mineral is extensively worked in the Sungyang hills in the district of Pingyang in Wanchau fú near the borders of Fuhkien, and not far from Pihkwan harbor. The alum-stone is thrown into a fire of brushwood as it is quarried, and burns and cracks with a slight lambent flame; the fragments are macerated in vats, and then boiled in vessels having iron bottoms and wooden sides for a short time. The lixivium is poured into reservoirs to crystallize into a solid mass, and when wanted for shipment, blocks of about fifty catties are cut out, and taken by porters across the hills in bamboo frames to the place of shipment at Chih-kí in Lannai harbor. If not wanted immediately, they are stored away at the mines for drying. The supply in the region seems to be inexhaustible, and the daily product was estimated by a visitor in 1853 at eighteen tons of alum, which would amount to not much less than 6000 tons per annum. This alum is equal to the best Roman; a roseate tint in some specimens indicates the presence of minute quantities of iron, and some parts of the district produce iron and silver. No potash nor any other material is employed as a flux or digester in separating the alum from its gangue. When the article reaches the depot, it is not unfrequently found soaked through, the porters having dipped their loads into the rivulets to make up the fixed weight they are obliged to deliver. Alum is occasionally used by Chinese masons as a cement, melted and poured into the interstices of stone-work; in damp situations it gradually loses its adhesiveness, however, and the masonry crumbles. It is often impure from intentional adulteration with lime and gypsum, or from the rudeness of the manipulations; the taste is not so sharp as the European salt. It is employed by the Chinese in purifying water, and sizing and whitening paper, but chiefly in bleaching or dyeing silks, cotton, and grasscloth.

ANISEED STARS, 大茴 *tá hwui*, and 八角 *páh kioh*, i.e. eight horns; the broken is known as 八角渣 *páh kioh chá*. This is the fruit of a small evergreen tree (*Illicium anisatum*), which grows in Fuhkien and the neighboring provinces, in Japan, and the Philippines. They are prized for their aromatic taste like anise. The name of *star* is applied to them on account of the manner in which they grow, the pods being in small clusters joined together at one end, and diverging in 6 or 7 rays. The husks have a more aromatic flavor than the seeds, but they are not

as sweet; those which are bruised or moldy should be rejected. The Chinese season dishes, and make a fragrant tea from them, deemed serviceable in fevers. They are chiefly exported to England and the Continent of Europe, at the average value of \$15 per picul.

OIL OF ANISEED, 八角油 *pák kioh yú*, is made by distilling the pods and seeds in small retorts in shops of the retailers; a picul of the raw material produces about 7 catties of oil. It is put up in tin cases, inclosed in wood, and goes chiefly to Europe and the United States, at an average annual export of 250 piculs, at \$150 per picul. It is used in perfumery, medicine and confectionery.

APRICOT SEEDS, or Almonds 杏仁 *hang jin*. There are at least three sorts of fruit, whose drupes are used for the emulgent preparation sold as almond tea or *hang jin chá*. One is an almond; apricot seeds are likewise brought from the northern provinces, while the kernels of peaches are also employed, all on account of the prussic acid in them. The warm tea is hawked about the streets, and taken as a pleasant drink after dinner, as coffee is in the West.

Beside the fruits enumerated in the tariff (lichees, lungans, lotus-nuts, melon-seeds, chestnuts, dates, and ground-nuts) there are others which form articles of trade. The nut of the ginkgo (*Salisburia adiantifolia*), called **白菓** *peh kwo*, i.e. white fruit, from their white shell, and resembling damsons in shape, are much liked by natives. The excessively sour berries of the *yáng mei* or Chinese arbutus (*Myrica sapida*), are relished by all classes, and in their native hills furnish a considerable article of food, freshly cooked or made up into sweetmeats. The seeds of a tree of the yew family (*Torreya nucifera*) called **榧子** *fei ts'í*, are collected and eaten like hazel-nuts. Persimmons, dried and prepared like biffins, are sent abroad to Siam and the Straits under the name of dried figs; they are used as ship's stores. The acorn-like seeds of the *Aleurites triloba*, **石栗** *shih líh* or stone chestnuts, are collected for the oil contained in their kernels, and sent away from Canton.

ARSENIC, 信石 *sin shih*, **砒礪** *pí siáng*, and also **人言** *jin yen*, or "man's words," by an anagram of the first character. It occurs in Kwangsin fú in the north-eastern part of Kiángsi, where it is obtained by sublimation from the crude ore; and is then again refined from the sulphur and other impurities by dissolving and precipitating it in water. Both the crude and refined are brought to market. The farmers employ it in rice cultivation to destroy insects by mixing it with grain when sown; and doctors exhibit it in treating intermittent fevers. It likewise forms an ingredient in the pastil made to smoke mosquitoes out of a room. The exportation to India has decreased to about 50 piculs annually, at \$12 for the refined. The red sulphuret of arsenic, called **紅信** *hung sin*, is mixed with arsenious acid, and furnishes part of the arsenic of commerce.

ARTIFICIAL FLOWERS, 紙花 *chí hwa*, are made of great diversity and beauty, copied both from nature and drawings. The manufacture at Amoy has grown to be of considerable importance, pains having been

taken to furnish the workmen with good models. This branch of labor is an important one among the people, and the different processes of shaving the pith, dyeing and pressing it, sorting the colors, cutting and gluing the leaves and stalks, and mounting the flowers into bouquets, festoons, and other forms, employ many thousands of both sexes. The work of drying and cutting the pith is mostly done where the plant grows, and the assorted sheets are brought to Canton in large bales.

BAMBOO WARE; screens are called 竹簾 *chuh lien*, and the ware 竹器 *chuh ki*. Bamboo grows over nearly the whole of China, and the industry and skill of the people have multiplied and perpetuated a number of varieties, (one author contents himself with describing sixty of them,) among which are the pipe, the pencil, the large yellow, the common green, &c.; the black-skinned comes from Sz'chuen and Húnán. Its uses are so various, that it is not easy to enumerate them all. The shoots are boiled, pickled, and comfited, and furnish sedentary priests with nutritious lenten fare, while the tabashir is sold by them as a rare medicine. The roots are carved into fantastic images, into divining-blocks to guess the will of the gods, or cut into lantern handles and canes. The tapering culms are used for all purposes that poles can be applied to in carrying, supporting, propelling, and measuring; for the prope of houses, and frameworks of awnings; for the ribs of sails, and shafts of rakes; for fences and every sort of frames, coops, and cages; the wattles of abattis, and the handles and ribs of umbrellas or fans. The leaves are sewed into rain-cloaks and thatches; plaited into immense umbrellas to screen the huckster and his wares on the stall, or into coverings for theatres and sheds. The wood, cut into splints of various sizes, is woven into baskets of every form and fancy, sewed into window-curtains and door-screens, plaited into awnings, and twisted into cables. The shavings and curled threads furnish materials for stuffing pillows, while other parts supply the bed for sleeping, the chopsticks for eating, the pipe for smoking, and the broom for sweeping;—the mattress to lie upon, the chair to sit upon, the table to eat on, the food to eat, and the fuel to cook it with, are also derived from it:—the ferule to govern with, and the book to study from; the tapering plectrum for the lyre, and the reed-pipe of the *sang* or organ; the shaft of the soldier's spear, and the dreaded instrument of the judge; the skewer to pin the hair, and the hat to screen the head; the paper to write on, the pencil to write with, and the cup to put the pencil in; the rule to measure lengths, the cup to gauge quantities, and the bucket to draw water; the bird-cage, the crab-net, the fish-pole, and the sumpitan, &c., &c., are one and all furnished by this plant, whose beauty when growing is commensurate to its usefulness when cut down. The poles are floated to Canton on rafts, and sold as they lie in the water, for \$8 to \$16 per 100 according to size. A score or two of bamboo poles for joists and rafters, fifty fathoms of rattan ropes, and a supply of palm leaves and bamboo mats for a roof, supply material for a common hut in the south of China; five dollars will build a decent one.

Bamboo-ware, in the shapes of chairs, screens, couches, &c., is largely exported; bamboo-shoots form an item in the home traffic; cut into slices they are sun-dried and pickled.

BEANS and peas 荳 *tau*; bean-cake 荳餅 *tau ping* or 荳石 *tau shih*. The Chinese cultivate legumes to a greater extent, perhaps, than any other nation. Gram or split peas, called 白荳 *pek tau*, is imported from India to some extent, for epicures in bean curd, who think the condiment made from it richer. The manufacture of bean jam and bean curd cakes for food from the flour employs many people. The cakes used for manure are made by crushing the ripe peas and boiling the grits soft; the mass is then pressed into cakes in iron hoops, and made solid by means of wedges driven down by heavy mallets. Peas and bean cake are exported from Yingtz' and Tientsin to Amoy and Swatau; they comprised one-fourth of all the produce shipped from Tientsin in 1861; and there is little else sent from Yingtz'. In 1859, about a million of piculs of the cake were reshipped to the south of China from Shanghai alone, chiefly for the consumption of sugar growers.

BONE and horn-ware, called 骨器 *kuh ki* and 牛角器 *niú kioh ki*, is exported to some extent, but the principal consumption is among the people. Buffaloes' and goats' horns are worked into lanterns, some of which are of large size and highly elegant. The manufacture of small opium boxes annually consumes many hundred piculs of buffaloes' horns, besides what is cut into handles, ferules, rings, puzzles, paper-knives, combs, chop-sticks, buttons, and other useful articles, from every other sort of horn.

BORAX or tinsel, 硼沙 *pang shá*, occurs in Ngánhwui and Kansuh; but the lakes in Tibet furnish the largest quantities, both in solution and in beds near their banks, whence it is dug for the Chinese and Indian markets. It is refined at Canton and in other large manufacturing cities, by the various workmen who use it; that in the shops is generally in impure, half-crystallized masses, in which state it is exported, chiefly to the Continent of Europe. The Chinese use it in glazing crockery and soldering metals, and as a flux in reducing the silix in glass, enamels, and other vitreous compounds.

BRASS FOIL, or tinsel, 銅箔 *tung pok*; brass buttons 銅鈕釦 *tung niú hau*; brass wire 銅絲 *tung sz*; brass ware 黃銅器 *huáng tung ki*. The foil is manufactured to an enormous extent for making the *kin hwa*, or "golden flowers" used in worship. It is exported to India; a box is estimated to hold 50 catties. The native brass buttons are about the size of small cherries, and furnished with eyes of the same material. They are cast with a roughened surface, and polished by rubbing them over each other and with wire brooms. Brass wire is used proportionally by the Chinese more than iron wire, as they can draw it out finer with their machinery. The finer sizes are employed in water lamps, in fastening artificial flowers, and for many other uses where iron wire is used by us.

Brass Buttons, of foreign manufacture and various fashions, are extending in their use among the Chinese; the figures of birds and animals on the face attract their fancy, and especially does a row of bright brass buttons down in front of the winter pelisse please. Gold dollars and half sovereigns are occasionally used for buttons, after an eye has been drilled on. The importation is chiefly into Shanghai.

CAMPHOR, 樟腦 *cháng náu*, is obtained from the *Camphora* (*Laurus officinarum*, a large tree which grows in Eastern China, Japan, and Formosa. The tree, including the roots, is cut into small pieces and gently boiled in a little water; the sublimed gum is received into inverted straw cones. It is brought to market in small cakes; that from Japan is esteemed the best, though neither the Chinese nor Japanese have the art of refining it pure. In packing it, care should be taken that the boxes are sound, and the lead well soldered, otherwise its volatility will cause it to decrease materially; it is always wet a little before packing, to allow for loss by evaporation. It is carried on deck in tea ships, lest the odor injure the tea. Good camphor is strong and penetrating, of a bitterish aromatic taste, and imparts a cooling sensation to the mouth. The annual exportation to Europe and America from China has been about 3000 piculs; in some years, over 4000. Its price varies from \$19 to \$25, while Baroos camphor is about \$3000 per picul. There is a kind of camphor much esteemed by the Chinese as a febrifuge, which they extract from the leaves of a sort of *Artemisia*; the crystals are limpid and brittle, and present a brilliant fracture.

The wood of the camphor tree is solid and tough, and used in ship-building; trunks, boxes, &c., are made from it, as the odor preserves articles for a long time from insects. The wood that has been boiled is inferior, but it is one of the best kinds of timber in China. Most of that brought to Canton comes from Tsiuenchau fú, in Fuhkien.

CANES OF whanghees, 竹竿 *chuh kán* and **鞭竿** *pien kán*. These are sent to England for the umbrella manufacturers; they are usually of bamboo. Walking-sticks are sold to a considerable extent in Canton, made from many kinds of wood, as tea, orange, camellia, rhamnus, rose-wood, the roots of banyan, bamboo, &c. They are cut and carved with considerable taste; and when sent off should be carefully examined as to worm holes and dry rot, and that they are not injured by fire or steam. At Ningpo, canes and pipes are beautifully inlaid with ivory or mother-o'-pearl, and ornamented with silver. The Chinese seldom or never carry a cane, and their use among foreigners at the ports was for a time regarded as indicating rank.

CANTHARIDES, 斑貓 *pan máu*. This term has been applied to a coleopterous insect collected in Sz'chuen, Kiangsu, and elsewhere, by nets; after drying, they are boiled for the poisonous or blistering extract, which medical men mix in their ointments.

CAPOOR CUTCHERY, 三籜 *san lái* or **三奈** *san nai*; the Indian name means root of camphor. This is the root of a tuberous plant which grows in Fuhkien and Sz'chuen; it is half an inch and more in diameter, and is cut into small pieces and dried for exportation; the cleavage is covered with a fine reddish pellicle, but externally it is rough and of a reddish color. It is powdered and mixed with oil, and thus employed in friction and plasters; it has a pungent and bitterish taste, and a slight aromatic smell. It is exported from Canton and Swatau, at \$5 per picul, in small amounts to Bombay, and from thence to Persia and Arabia, where it is used in perfumery and for medicinal purposes, and also to preserve clothes from insects.

CARPETS and DRUGGETS, 氈 or 氈 *chin*. The felted druggets manufactured in the north of China form an important article of traffic throughout those regions and in Central Asia; they are used by travellers both as carpets and blankets, and spread in the houses to protect the inmates from the damp, chilling tiled or earth floors. The Japanese procure them from China. Red is the favorite color, but white and brown colors are common. The woolen rugs, used in the northern provinces for the same purposes as the felted druggets, are made of sheep, camels', and goats' wool, beautifully woven in pretty colored patterns; they are thick, warm, and durable, and are much sought after.

CASSIA, 桂皮 *kwei pí*, is the decorticated bark of the *Cinnamomum cassia*, a large and most useful tree, whose wood, bark, buds, seeds, pods, leaves, oil, are all in request for various purposes in carpentry, medicine, perfumery and cookery. Cassia bark is produced also by other, if not by all, the species of the same genus of plants. It grows in all the southern provinces of China, especially Kwangsi and Yunnan, and also in Annam, Japan, and the northerly islands of the Archipelago. The bark is stripped off by running a knife along the branch on both sides, and then gradually loosening it; after it is taken off it is suffered to lie for twenty-four hours, during which time it undergoes a kind of fermentation, and the epidermis is easily scraped off. The bark soon dries into the quilled shape in which it comes to market. Thin pieces, having an agreeable spicy taste, a mucilaginous nature when chewed, a brownish red color, and a tolerably smooth surface, are the best kind; the small and broken is inferior. It is easily distinguished from cinnamon, being smaller quilled, breaks shorter, and is less acrid and pungent. The cassia brought from Ceylon and Malabar is inferior to the Chinese, more liable to foul packing, thicker colored, and less aromatic. There is a kind offered for sale at Ningpo, which has no botanical affinity with the true cassia, but is obtained from a tree of the Magnolia family (*Drymis Winteri* ?); its cheapness, \$3 a picul, recommends it for common use. The Chinese cassia is sewed up in mats, usually two or more rolls in each mat, and a pound in a roll; it is shipped to Great Britain, Europe, and the United States, to the extent of 35,000 piculs annually, at the average value of \$15 per picul.

Cassia oil, 桂皮油 *kwei pí yú*, is obtained from the leaves and twigs of the cassia tree by distillation, and is used as a medicine, under the name of *oleum malabathri*. It is easily tested by putting it on the hand, where it will evaporate slowly, and any foreign substance in it will thus be detected. The leaves used to be exported under the name of *folia malabathri*. The manufacture of the oil almost ceased during the years 1842 and 1843, as was reported, on account of the expenditure of wood for fuel, but the demand for it ere long caused a resumption. The demand exceeds the supply, even at the high price of \$200 to \$250 per picul, which it has ranged at during the last few years. It is used in perfumery and flavoring condiments.

Cassia twigs, 桂枝 *kwei chí*, also form an article of separate commerce, worth about \$5 a picul. They are the extreme and tender ends of the branches, such as are used in distilling the oil.

Cassia buds, 桂子 *kwei ts'*, are the fleshy ovaries of the seeds, and obtained from the same tree as the cassia lignea; they are pressed at one end so that they bear some resemblance to cloves in shape. Those that are plump and fresh, possessing a fine cinnamon flavor and free from stalks and dirt, are the best. An article of the same name is also obtained from the cinnamon tree in the south of Kwángai. If the buds are packed in the same bundles with the bark, the flavor of both is improved. They are put up in boxes containing one picul, for Great Britain and Europe, and some to India; upwards of 500 piculs at \$30 each, are annually sent to those quarters.

Cassia fistula, 槐花青 *hwai hwá tsing*, is the name for the long cylindrical pods of the senna tree (*Cathartocarpus*), known to the Chinese as 長果子樹 *cháng kwó ts' shú*, or tree with long fruit. They are collected in Kwángai for their pulp and seeds, which are medicinal. The pulp is reddish and sweet, and not so drastic as the American sort; if gathered before the seeds are ripe, its taste is somewhat sharp. It is not exported, to any great extent, west of the Cape.

CASTOR-OIL, 蓖麻油 *pi má yú*, is expressed from the seeds of the *Ricinus* by simple pressure. It is burned in lamps and mixed with paints, but the largest portion is used in cooking; the action of heat and mixture with the food seems to partially deprive it of its purgative qualities.

CHESTNUTS, 栗子 *lih ts'*, are chiefly an article of internal trade. Two species of trees furnish excellent chestnuts for the market, one kind of which is about the size and form of the hazel-nut. Both grow in the central and northern provinces.

CHINA-ROOT 土茯苓 *túh fuh ling* or 冷飯頭 *lang fán tau*. This medicinal and singular production was for a long time regarded as the root of the *Smilax china*, a climbing plant growing in Honan and throughout western China. It is a false tuber, called *Pachyma cocos*, found growing like a fungus from the roots of fir trees, or in the ground apart from the trees, and appears to be caused by a disease in the roots, excited by the application or presence of certain manures. In its growth it disintegrates, or even obliterates the woody fibre, and is collected in tubers weighing from a few ounces up to several pounds. In market they appear jointed and knobby, of a reddish brown color, and break crisp; the taste of the fresh root is sharp and bitterish, and the cut surface smooth, close-grained, glossy and flesh colored. If old, the dust flies off when broken. The Chinese regard it as a valuable medicine, and prepare much of it for exportation; they also eat it, to increase flesh.

CHINAWARE, 瓷器 *ts' kí*; fine 細 *st*, and coarse 粗 *tsú*. The largest part of the export at present consists of coarse blue ware to India and the Archipelago. Large manufactories of it exist at Pa-kwoh, a village near Shih-ma, between Amoy and Changchau, and the common articles of domestic use find their way from Amoy to India and the Archipelago, Siam, and over the southern provinces. Its fantastic figures and uniformity of coloring and design have impressed themselves on the popular mind of Asiatics. The finest specimens of porcelain which were sent to Europe two centuries ago have now been excelled there,

and little of the best ware of this country goes abroad. The furnaces at Kingteh-chin in Jáu-chau fú in Kiángsi still furnish the finest ware, but their present productions are regarded as inferior to those of Kienlung's reign. It is brought to Canton in its plain state, and the pieces are painted according to demand. The figures are sketched in India ink, and then painted with water colors mixed with strong glue; the pieces are placed in a reverberating furnace about half an hour, and taken out and washed when sufficiently cooled. The division of labor in the preparation and painting of chinaware is carried to a minuteness not often seen in other branches of native art. The Nanking porcelain, ornamented with Chinese designs of heroes and scenes in history, intermixed with quotations from celebrated authors or pictures of animals, is usually a better ware than the highly painted.

The prices of dinner sets of 89 pieces for 12 persons range from \$62 to \$92; the breakfast sets of 70 pieces are from \$20 to \$35, according to the painting. Larger sets for 24 or 30 persons of 276 pieces, are \$330; the breakfast set of 112 pieces about \$116; for similar sets of the blue Fitzhugh pattern the prices are \$175 and \$43. The export of other kinds of crockery than table ware is now perhaps larger than formerly, as there is always a demand for the vases, jars, statuettes, card-plates, fruit-baskets, &c., but no separate account is kept. The search for rare and beautiful specimens of enameled, cracknel, and ancient ware has increased the export.

CINNABAR, 硃砂 *chú shá*, is the sulphuret of mercury. The native is found in many localities in the central and western province; it is also manufactured from quicksilver, by the reaction of sulphur and saltpetre on the metal in small copper furnaces, in which it is collected after sublimation in acicular crystals. Cinnabar is used in coloring red lacquered ware, and in making the Súchau lacquer; it is employed in painting, and forms an ingredient in many medicinal preparations. In former times it was highly prized for its virtues, and regarded as the true philosopher's stone.

CLOTHING; 衣服 *í fuh*; cotton is 布衣服 *pú í fuh*, and silk is 綢衣服 *ch'iu í fuh*; ready-made clothing, 成衣 *ching í*. The Chinese emigrants to the Archipelago and Siam consume much common clothing, which can be profitably exported ready-made; and the cheapness of labor has induced ventures of nankeen and grasscloth garments of European patterns to South America and California.

COPPER CASH, 銅錢 *tung tsien*, has been largely exported to India during the last ten years, for the manufacture of inferior brazen dishes and pans; some has gone to England. Cash should legally consist of nearly pure copper, and each coin weigh one mace; but during the last three reigns since 1798, there has been a gradual debasement in size and purity; sand, iron filings, tin or tutenague, have been used by different officials, so that the present currency is much deteriorated. Cash are selected to take to Bali and Lombeck to buy produce, as it is the current coin in those islands; and is even buried in large sums with their deceased chiefs. Common coin purchased by weight, at from 16,000 to 18,000 pieces to a single picul, is sent to India, rising in cost from \$10 at first to \$18 per picul at present; 40,000 piculs have gone forward in some years.

COPPER ORE, 生銅 *sang tung*; old sheathing 舊銅片 *kiú tung pien*; copper and pewter ware 紫黃銅器 *tsí' huáng tung kí*; pewter-ware is also 錫器 *síh kí*. The sulphuret is the most common ore of copper brought to market, and the metal seems to be abundant in China; Lin-ngan in Yunnan, Wú-chang in Húpeh, and Tungebau in Shenst, are all mentioned as possessing copper mines. The half purified ore is brought to Canton from Yunnan, to be smelted and alloyed according to the demands for it; malachite is likewise smelted for the metal. The alloys consume more than is used in a pure state, but no data are obtainable respecting the amount, though the total consumption of gonga, brass-foil, locks, pipes, lamps, bells, cannon, cash, hand-stoves, incense pots and censers, statuettes, and household utensils, indicate its abundance and cheapness. The copper of Japan and Annam is very pure, containing only traces of sulphur and oxygen; the former occurs in bars six inches long and 4 or 5 lbs. weight, of a cinnabar red color, which is due to a pellicle of the protoxyd that covers the metal and is produced at the smelting. M. Rondot furnishes many data about refining and alloying copper, (pp. 139-148) and the manufacture of gonga, white copper, and false white copper, from which it appears that their ingredients are not always alike. An analysis of three tobacco pipes gave the following results:—

COPPER,.....	58.0	...	...	50.5	...	...	70.0
ZINC,.....	35.0	...	...	30.0	...	...	9.0
LEAD,.....	3.5	...	...	1.0	...	...	1.0
TIN,.....	1.5	...	...	0.5	...	...	1.0
IRON,.....	2.0	...	...	3.0	...	...	7.0
NICKEL, ..	0.0	...	...	15.0	...	...	12.0
	100.0			100.0			100.0

White copper, or argentan, 白銅 *peh tung*, is an alloy which has attracted attention abroad. Arsenic and silver have appeared in some analyses of it, in addition to the metals above mentioned, but the researches of the French Delegates have shown that the Chinese fuse 10 parts of an ore called *peh tung*, 2 parts of another called *hung tung* or red copper (which appears to be an arseniate of nickel), and 2 parts of zinc; their alloy is white copper. These ores probably differ somewhat in different localities, and therefore their alloys are unlike. There is another compound of a cheaper sort, called *kia peh-tung*, or false argentan, which is manufactured into many useful articles; it seems to be chiefly copper whitened with tin or nickel.

Tutenague or China spelter, 山銅 *shán tung*. The word *tutenaga* is of Asiatic origin, not yet exactly known; the term was applied to spelter by the Portuguese, whence other foreigners have extended it to the native cupreous alloys. It is now generally applied to the gong metal, an alloy of about 80 parts of copper and 20 of tin, according to the analysis of M. Pelouze. It is harder than zinc, though less so than iron, sonorous, compact, and has some malleability. The fresh fracture is brilliant, but soon tarnishes. It is made by melting 100 catties of the mineral called *hung-tung* or red copper, with 25 catties of tin, and running it into a thin plate, when intended for gonga. The sonorous quality of these instruments is owing chiefly to long-continued and

expert hammering, and their price depends in a great measure upon the sound. Other instruments are also made of this alloy. Till superseded by spelter from Silesia, tutenague was clandestinely exported in large quantities (more than 50,000 cwt. annually) to India, but is now seldom or never shipped; true spelter being on the contrary imported to compete with it in China. Its export price used to be about \$14 a picul, but it rises as high as \$40; large gongs are sold from 40 to 50 cts. a catty, smaller ones at half that price.

COFFERAS, 青礬 *tsing fan*, i. e. green alum, is obtained from iron pyrites by roasting and lixiviating the ore, which is found near Súcchau, and also in Canton province. It is used in dyeing; little or none is exported.

COTTON RAGS, 舊棉絮 *kú mien sú*, have begun to be collected for European paper-makers in consequence of the scarcity of suitable materials in western countries. The freight is likely to operate against developing as large a trade in rags as might otherwise arise; 1,500 piculs left Shanghai in 1859 at a tael per picul. Native shoemakers use rags in stuffing the soles of shoes, the pieces being pasted on each other, or on strips of paper, to form the inside.

CRACKERS and FIREWORKS, 各色炮竹 *koh sih páu chuk*, 響爆 *hiang páu*, 烟火 *yen ho*; 火炮 *ho páu*; 爆像 *pan tsiang*. Crackers are made of gunpowder rolled up like cigarettes, in coarse bamboo paper, with a covering of red paper, that being the happy color among the Chinese. They are thought to drive off noxious influences by the people in the southern provinces, and their use is associated with idolatrous worship; the northern Chinese do not employ them so much. They are made in Húpeh and at Fuhshán; strings of 80 crackers are put up in square packets of 100 each, and packed in boxes of 40 packets. The larger sorts of fireworks, as Roman candles, rockets, fuses, wheels, &c., of which M. Rondot enumerates 15 distinct sorts, are inferior to the foreign, and seldom exported. The largest proportion of fire-crackers goes to the United States; a few are also shipped to South America.

CUBEBS; 澄茄 *ching kid* or 畢澄茄 *pí ching kid*, is a name applied to the true cubebs, and by the Chinese to a berry resembling black pepper in size and form, which Mr. D. Hanbury thinks is produced by the *Daphnidium cubeba*. Those in the shops are one-seeded globular berries attached to a pedicel, on which traces of the perianth are visible. The testa is cartilaginous and shining, the cotyledons thick and oily. A decoction is useful in vertigo, hysterics, or paralysis; the fresh fruits are used for preserving fish; the odor is fragrant, taste aromatic, and rather pungent. They are brought from the western provinces, and are worth from \$18 to \$20 per picul in Canton; a few boxes go to India under the name of cubebs, but they differ much from the true drug.

CURIOSITIES, antiques; 古董 *kú tung* or 古玩 *kú wán*. Under this general term is included a variety of articles, valued chiefly for showing the peculiar habits or skillful workmanship of the Chinese, and

regarded as rarities elsewhere. Hardly a ship leaves the country without some of them, but no list can be kept of their sorts or value, and all that can be done is to enumerate some of the most common. Lanterns of horn, glass, silk, and paper, either painted, plain, carved or tasseled, some of them very beautiful and gaudy, are made in Canton; the "horse-racing lanterns," in which a succession of paper figures are attached to wires, and made to revolve by the draft of heated air flowing through the lantern while it is lighted, are among the most ingenious. Works in jade, serpentine, agate, and other kinds of gems and stones, as bowls, cups, rings, and pots, cut from single pieces, frames with trees, inscriptions or figures of stones set in a paste or inlaid in a board, snuff-bottles of crystal, onyx, and other kinds of hard stones, and seals of many kinds, exhibit the patient labor of the workmen. Specimens of antique or rare porcelain and enamel are much sought after by Chinese connoisseurs, who pay high prices for old pieces. Carved work in horn, stone, roots, metal, gem, and wood, are more prized by the foreigner; and the variety has much increased lately. The eager search after the most delicate or ancient specimens of work in stone and metal has tended to draw them from their recesses in private families, or remote towns in the interior; and as many of the most highly prized kinds are not made now anywhere in China, they are gradually becoming more rare and costly. The exquisite specimens of skill, good taste, and ingenuity, seen in some of these works of Chinese art, have never been surpassed in any country.

They are procurable at various shops in Canton, especially in Physic St. (Tsong-mo-kái). At Amoy, the woven paper pictures, carved olive seeds, stone-vases and jars, statuettes and images in copper, earthenware and wood, bronzes and mirrors, are sought for, as they are also at Fuhchau and Ningpo. The shops at the latter city exhibit many fine carved frames, works in pearl, naker, and ivory, and the curious composition stone vases. It is impossible to estimate the value of these articles of *vertu*, but the annual exportation is probably over \$200,000 to all parts.

DYESTUFFS. 染料 *yen liáu*; green dye, 綠膠 *luh kiáu*. This composition furnishes a beautiful and permanent green, which has not long been known to the dyers of Chehkiang themselves, and has attracted attention in Europe.

It is obtained by boiling the yellow bark of a species of *Rhamnus*, known as 綠草 *luh tsáu* or *loh sa*, which is cultivated for the purpose in the region of Hángchau, with the whitish bark of a wild plant found in that part of China, in iron pans. The residuum is taken out after three days, and cotton cloth prepared with lime dipped in it five or six times; the coloring matter thus soaked up is then washed out in water, and put in iron pans to be again boiled. It is then taken up on cotton yarn by repeated immersions, and afterwards washed off and sprinkled on thin paper, to be afterwards exposed to the sun. This product is the *luh kiáu*; ten parts are mixed with three of subcarbonate of potash in boiling water to dye cotton cloth or hemp, but it is too dear to use for silk, as only rough surfaces take it readily. For further information concerning vegetable dyes in China, see Rondot, pp. 192-200.

DATES; red, 紅棗 *hung tsáu*; black, 黑棗 *heh tsáu*. The fruit known in China under this name has been incorrectly so called from the resemblance of the dried plums in color and taste to the true fruit of the palm, with which, however, it has not the least botanical affinity. The *tsáu* is a species of *Zizyphus* or jujube, a slender tree of many branches, and covered with an abundance of lightish-green, linear-shaped leaves. The *ta-tsáu*, or large date plum, is the sort selected for making the 蜜棗 *meh tsáu*, or honey date; the ripe fruit is slit across the skin, and then soaked in honey to saturation, after which it is carefully dried, and put up in small tubs. The tree flourishes throughout the north of China, and yields a large crop of fruit; the dried fruit is esteemed as a rarity in the south. The taste of the fresh ripe date plum is mealy and sweetish, and it forms an important item of food in its native districts.

Eggs, preserved; 皮蛋 *pi tén*, i.e. skin-eggs; also 鹹鴨鵝 *hién yáh chun*. Duck's eggs only are commonly preserved. Ashes, tea-dust, clay, salt and lime are mixed and rolled over the egg; the preparation dries on, and preserves it from change for many months. All these ingredients are not used at once by those who preserve eggs, the salt and ashes are the important parts. Large exportations of eggs used to be made to California, and the internal trade is great. The artificial hatching of duck's eggs is practised throughout the country, and is described by Fortune and De Mas; in the vicinity of Canton the natural heat of the fresh eggs supplies nearly all the stimulus necessary to incubation, but at Chusan and in the north additional fire is needed.

FANS; feather fans 羽扇 *yü shen*, or 毛扇 *máu shen*; paper fans 紙扇 *chi shen*; silk fire-screens 絹扇 *kiuen shen*; palm-leaf 葵扇 *kwei shen*, 細 *si* and 粗 *tsú*, trimmed and untrimmed. Fans are also made of lacerated bamboo, carved silver, sandal-wood, ivory, and bone, chiefly for foreigners. The embroidered fire-screens are beautiful specimens of skill, having the same design worked on both sides, like that mentioned in Judges v. 30, where Sisera's mother speaks of "divers colors of needlework on both sides." Paper or sarsnet fans are made to imitate the embroidered; in some the faces and hands of the figures are ivory. The feathers of the argus and other pheasants, heron, egret, goose, and other sea-birds, cock, &c., are used for fans of many shapes and sizes, open and folded. The finest kinds of fire-screens and feather fans are sent abroad as articles of luxury, but the trade in palm-leaf fans to the United States and South America from Canton is large; they are put up in boxes of 500, worth from \$1.50 to \$3 per thousand.

FELT CUTTINGS; 氈碎 *chen sui*; felt caps 氈帽 *chen máu*. Felt caps are worn by the poor throughout the whole country. They are of various shapes and different degrees of fineness; some are made hollow, so that, when pulled out, they resemble a double cone. The cuttings are collected from the manufacture of druggets, caps, soles of shoes, and leggings, to be boiled down and felted over again.

FISHLINES, 魚絲 *yü sz'*, are made of neatly twisted silk thread, put up in single lines, 80 to 120 feet long. Fish-poles, cut into four lengths, the smaller of which run into the larger, are also made in a workmanlike manner to resemble a walking-stick.

FURNITURE was classed in the old tariff as 雜木器 *tsāh muh kí*, and charged by the picul. The furniture made at Ningpo, with scenes and figures inlaid in ivory, has been exported to some extent, but the best furniture is made at Canton, where the cabinet-makers have successfully copied the patterns furnished from abroad. They import fine woods from Siam and the Archipelago, and use their own black and solid woods in making every kind of furniture, some of which is beautifully carved. A kind of native ebony, known as 酸枝木 *suān chí muh* is much employed for this purpose, but rosewood, satin-wood, amboyna-wood, and others are much used; the camphor, pine, elm, Chinese mahogany or pride of India, and white olive, furnish timber for common articles.

GALANGAL, 良薑 *liáng kiáng*, i.e. mild ginger. This is the root of the *Alpinia galanga*, which grows in Shansi, Fuhkien and Káu-chá in the S.W. of Kwangtung. The largest roots are often tough and woody, with a thin bark, full of knobby circles on the outside; bitterish, less aromatic and valuable than the smaller sort. Good roots are about two inches long and hardly half an inch thick, extremely firm though light, of a reddish brown outside and a pale red where cut, full, plump, and a peppery aromatic taste. It is used in curries and other dishes, and in medicine, for which purposes it is exported, at about \$4 a picul. The seeds of this plant are used as aromatic medicine under the name of 紅荳蔻 *hung tau kau*, or red nutmegs.

GARLIC, 蒜頭 *suān tau*. All kinds of cultivated alliaceous plants are eaten by the Chinese; the trade in them is entirely internal, except the few hundred baskets of onions brought from Bombay.

GLASS or vitrified ware, 料器 *liáu kí*, and 玻璃鏡 *po lí king*, is exported to a small amount. The material called *liáu* resembles glass more than porcelain; it is a sort of strass that is colored in imitation of precious stones, and is one of those branches of the ceramic arts that the Chinese used to excel in more than they do now. Some of the flower jars are exquisitely ornamented with raised figures enameled on the surface in different colors. The chief articles of export in glass are hand looking-glasses, sconces, a few chandeliers and glass lanterns, which go to the Archipelago and Siam, and to India. The glass of the Chinese mirrors is thin, and the reflection imperfect; they are sent chiefly to Malaysia and India.

Glass armlets or bangles 料手鐲 *liáu shau shuh* or 燒料銅 *shau lóu uh*, is an Indian name given to wrist and ankle rings. The Chinese make them of a clouded, opaline, or plain strass to imitate jade and chalcodony. They are put up in pairs, each box containing a thousand pairs, estimated to weigh a picul, and valued at about \$50. Besides wristlets and anklets, the manufacture of ear-rings, archer's thumb-rings, finger-rings, and hair-pins, mouth-pieces of pipes, snuff-bottles, buttons, &c., of this same material, forms an important branch of native industry.

Glass beads, 草珠 *tsāu chú* 料珠 *liáu chú*, and 土珠 *tú chú*; they are sent wholly to India or the Archipelago; those sent to Bombay are partly reshipped to Africa in exchange for ivory.

GOLD 金 *kin*. This metal is brought from Australia and California chiefly in the shape of dust; it used to come from Borneo in impure masses. The Chinese counterfeit the ingots, either by coating them with a thick crust of gold, and making the inside of silver or of copper; or by introducing lumps of lead or other metals into them; the export consists chiefly of thin leaves. The metal is most abundant in the northern provinces; it is brought to market in thin plates, and in bars weighing about 10 taels. Its purity is ascertained by means of the touchstone, a kind of obsidian or black jasper, which gives a different colored mark when the gold is of unequal purity. This is called a touch, and the color shows the proportion of pure gold. Needles for comparison are also made of different proportions of alloy, by which the stone is rubbed at the same time with the gold. To express the fineness of gold, it is divided into 100 touches; if the gold is 96 touch, it has four parts of alloy. The Chinese are very expert in the use of the touchstone; the touches have each a separate name, and the ingots are shaped differently to distinguish them. The importations of gold at Canton from 1852 to 1856 reduced the proportionate value of gold and silver as 1 to 14; but it has since risen to the usual rates of 1 to 16; at Hankan, it is as 1 to 15½. The range of the touches is between 70 and 100. Gold leaf is made in great quantities; but not beaten very thin, nor evenly; the leaves are about three inches square. It is largely exported to India.

GROUND-NUTS 花生 *hwá sang*; ground-nut cake 花生餅 *hwá sang ping*. This plant (*Arachis hypogaea*) is cultivated throughout the whole country from the Great Wall to Hainan. The nuts form an important article of food; the oil is expressed for cooking and for burning in lamps, and the refuse cakes are fed to animals or applied as manure. The nuts are worth about \$1.25 a picul, and the cakes two cents each; the oil is the chief article of export.

GYPSUM 石膏 *shih kau*. This mineral occurs abundantly in the crystallized and amorphous forms; the powder enters into the composition of many medicines and articles of food, especially in the bean-cakes and eurd (sometimes called bean-macaroni), under the impression of its cooling properties. It is worth about a dollar per picul.

GRASSCLOTH 夏布 *hiá pá*, i. e. summer cloth; the term *grasscloth* has been justly criticized as inapplicable to this beautiful fabric; it is one of those words like rice-paper, dates, joss-sticks, betel-nut, or terra japonica, which once heedlessly adopted into the English language, are there retained to perpetuate errors respecting the things designated. The researches of the French Delegation have shown that certainly three, and perhaps four, plants furnish the fibres for *hiá pá*, the *Bahmeria nivea*, the *Sida tiliaefolia*, and the *Dolichos bulbosus*, all of which are cultivated. The first makes the finest sort, and is that which, bleached and unbleached, coarse and fine, clothes so many Chinese in the southern provinces. There are many varieties of *hiá pá*, costing from 8 cents up to \$1.20 per yard. The exportation of all these fabrics is small, as they are less durable than true linen; the Malayan islanders take the cheaper sorts, and considerable of the finer kinds go to America as handkerchiefs. The manufacture is not confined to the southern provinces, but Canton is the principal mart for that which is exported, a large portion of which is woven in the prefecture.

HAIR, goat's 山羊毛 *shān yáng máu*; camel's hair 駱駝毛 *loh to máu*. Hair is collected in the northern provinces to manufacture the felted cloths and druggets so widely known in those regions, and to some extent for stuffing cushions, &c. The hair of horses, dogs, and cattle is likewise collected for similar purposes, that of rabbits, cats, and other smaller animals for the manufacture of writing pencils; and human hair for false queues, and fancy work. The price of rabbit's hair is about \$10 per picul; that of human \$50; camel's \$12, and goat's \$4.

HAMS, 火腿 *ho tui*. The internal trade in hams is large, partly owing to their use in traveling, and to the custom prevailing in many parts of the country to serve them at wedding feasts. In Shantung, dog's hams are cured for export. The high-backed hog raised at Fuh-chau furnishes very good hams and bacon, in which there is a considerable trade.

HARTALL or *orpiment*, 石黃 *shih huáng*. This is a native sulphuret of arsenic, and has been long known to the eastern Asiatics. It comes from Mang-hwá in Yunnan and the adjacent country of the Laos, whence it reaches Canton, Bangkok and Ava. The native ore occurs sometimes in compact, amorphous pieces, at others composed of thin plates of a lively gold color, intermixed with pieces of vermilion red, of a shattery, foliaceous texture, flexible, soft like talc, and sparkling when broken; when burned, it exhales much sulphureous smoke. Orpiment is mostly used as a pigment by painters; the Malays seem to use it in eye-washes; and not a little is employed in making depilatory soap.

HEMP 蔴 *ma*. The Chinese apply the term *ma* to fibres which are similar to those of the proper hemp, and used in the manufacture of cordage and cloth. In the northern provinces the *Sida* is cultivated, while in the south, a species of *Bahmeria* or nettle furnishes a similar fibrous material. At Chusan, the same or a similar plant is extensively cultivated, and the fibres of each of these plants are woven into cloth. The people of Fuhkien interweave them with cotton for napkins, and such like uses. Raw hemp sells for about \$3 per picul. There are many varieties of hempen cloth known among the Chinese, not necessary to describe. The *po-lo-ma* is woven from the fibres of a *Corchorus*, and looks like the gunny bags from India, but finer; a piece of 40 yds. costs from \$1.50 to \$3. It seems to be doubtful whether either the proper hemp, or the true flax plant are raised in China. Three sorts of threads are obtained from the hempstalks, which sell from 25 up to 90 cents for skeins of 500 threads.

HONEY, 蜂蜜 *fung m'h*. See BEESWAX.

IVORY-WARE, 象牙器 *siáng yá kí*. The skillful carving of the Chinese in ivory, and cheapness of their work, causes a large sale to all parts of the world. Some of the articles have attracted attention from their beauty of design, others from their fine workmanship, and a few from their singularity. Among the last, are those specimens of patient toil, the carved balls, containing from 3 to 20 interior balls, each one entirely separated from the other. A fine piece of ivory is chosen and turned to an exact sphere; several conical holes are cut into its body, all meeting in the centre by means of drills working to a gauge, so that

each hole will be of the same depth. The centre being bored out an inch or so, the mass of ivory is fixed firm with wedges, and a line is drawn far inside of each conical hole at the same distance from the surface; the workman cuts into this line with knives working on a pivot, and passes around the sphere from one hole to another, cutting into the sides of each until the incisions meet and the central sphere is loosened. Its faces are then turned over to the holes, so that they can be smoothed or carved with proper tools, before proceeding to the next. Another line is then drawn outside of this sphere, and the same process of cutting repeated till another is loosened, and the new surfaces polished like the first. In this way all the concentric spheres are cut out; about three months' labor is required for a large ball; they sell from \$12 to \$30 according to the number of spheres and the carving. Elaborate models are also executed in ivory, as a flower boat with all its kitchen, furniture, and gear complete, and tiny boatmen at the oars; miniature pagodas of nine storeys, with windows, bells, and turrets; trees with birds, monkeys, and squirrels among the branches; landscapes with dwarfed houses, boats, and people, all in an area of a square foot, &c., &c. The ware sent consists of fans, scales, seals, paper-knives, chessmen, card-cases, ferules, dice, fruit and flower baskets, puzzles, billiard balls, sheets for miniature painting, &c., the greater part of which is made at Canton. The consumption of ivory among the Chinese is chiefly for chopsticks, inlaid work, mouth-pieces of pipes, foot-measures, and rings. At Súcchau and Amoy, fine statuettes are now and then produced.

INDIA-INK, 墨 *meh*, is composed of lampblack and glue obtained from different substances, and combined and perfumed according to the quality of the ink. Lampblack is collected by burning the twigs and leaves of pine under a movable thatch, so arranged as to intercept the smoke as it rises. The finest ink is manufactured from the product of oil slowly burned in earthen jars, and collecting the soot in the upper one. Lampblack is brought to Canton from Kwángsé in hampers, and manufactured both into writing and printing ink. Boiling glue is poured on it, and the whole stirred together till properly mixed; after it has cooled a little, it is pressed into carved wooden molds, into which a stopper fits tightly; the cakes are soon taken from the molds and dried. The musk, or other perfume, is mixed in the glue. The finest India ink comes from Hwui-chau fú in Ngánhwui; its fracture is shining, and no grittiness can be perceived when rubbed on the finger nail; inferior sorts are usually the most ornamented. Ink is made in oblong prisms, weighing from 5 to 80 per catty; the finest is priced as high as \$5 a catty, common sorts range from 40 cents to \$1.50. The boxes usually contain 100 cakes; the export is to Europe. The lampblack for printing ink is mixed with strained congee, and when the paste is properly dried, it is kneaded on a slab, and cut into strips shaped like wrought nails; the printers dilute it in oil as they use it, laying it on the blocks with a brush made from the bark of the coir palm.

INDIGO, liquid 水靛 *shui tien*; dry indigo 土靛 *tú tien*; indigo dye 靛青 *tien-tsing*. A blue dye is extracted from different plants, cultivated for the purpose by the Chinese. In the south, the *Indigofera* and *Polygonum tinctorum* are the plants relied on to furnish the dye; but

along the Yangtsz' valley, the *Isatis indigotica* and *Ruellia* are raised for the purpose. The latter is planted in Chehkiang about the first of May, and is cleared off the ground before frost, and before any flowers are formed. The suckers intended for the next year's crop are neatly cut of the same length, tied in bundles, and banked in dry loam during the winter. The rest of the plants, leaves, stems, and twigs, are thrown into tanks in the field, which are filled up with water; in five days partial decomposition takes place, and they are all removed. About 30 catties of lime are now put into the green-colored water, and most thoroughly mixed with it by means of brooms. Four men now begin to beat the liquid with rakes very gently for about half an hour, and as it goes on the color changes to a dingy yellow, but the froth which thickly coats the tank is bluish. A few drops of cabbage oil are poured into it, and the froth disappears on stirring. After standing a few hours, about two-thirds of this liquid is drawn off as useless, and the rest decanted into a smaller tank, where it settles in three or four days, till the coloring matter is left at the bottom in the form of a thick paste of a beautiful blue color. Fortune, who furnishes these details, remarks that it sells on the spot from 50 to 100 cash a catty; at Shanghai, it is worth about \$20 a picul.

JOSS-STICKS, 時辰香 *shí shín hiáng*; the first name is corrupted from the Portuguese word *dios*, because these incense sticks are so much used in idolatry. They are sent abroad in small lots as a convenience for seagar-smokers. The finest are made of the dust of sandal, garu, and other fragrant woods mixed with cedar or fir, and just enough clay to stick them together. The Chinese make them three or four fathoms long, of a uniform size, and burn the coil in their shops for the fragrance and to mark time; it is from this last use that the native name originates. Those exported are cut into sticks a cubit long, and must be packed perfectly dry; the price is about \$2 a picul.

KITTYSOLS (from the Spanish *quitasol*), 雨遮 *yü ché*, or 紙傘 *chí san*, are umbrellas made of bamboo frames covered with black or brown oiled paper. The best are made in Húnan, and sell at \$25 to \$30 per 100, while the Canton kinds range from \$7 to \$12 per 100, according as they are painted and guarded by rattan. They are sent to the Archipelago and India in picul boxes, containing 100 umbrellas each. Considering the material they are made of, this sort of parasol wears a long time, and the Malays, Siamese, and other people in Chin-India, depend chiefly upon China for their supply.

LACKERED-WARE, 漆器 *tsih kí*. The varnish used in making lackered-ware is the resinous sap of one or more species of sumac, (*Rhus* or *Vernix vernicia*, and the *Augia sinensis* of Lour.) which grow best in Kiangt, Chehkiang and Sz'chuen; the natives, however, call only one sort *tsih shú*, or varnish tree. The sap is drawn from the tree in summer nights, exuding slowly into shells, and is brought to market in a semi-fluid state, or dried into cakes of a whitish color, worth from \$40 to \$100 per picul. When prepared for use, 5 catties of lacker, 10 of spring-water, 5 taels of ground-nut oil, 2 pig's galls, and 4 taels of vinegar, are mixed together until they form a pasty mass of a lustrous black. These ingredients are used in other proportions for inferior sorts. The

wood should be well seasoned and planed, and the grooves covered with *shá chí*, a kind of tough paper, or the lint of hemp, rubbing it on with a size made of pig's gall, pure, or mixed with fine red sand, as a priming, until the wood is uniformly coated. The article is then placed in a dark room, and a coating of the prepared lacker laid on with a brush, and put by to dry. These coatings are repeated from three to fifteen times, according to the fineness of the ware. When perfectly dry, the articles to be gilded are sent to the proper workmen, whose first operation is to rub powdered chalk or white lead on a paper, which is pricked full of pin-holes, and thus transfers the design to the plain surface, so that it can be filled out. It is then painted in lacker mixed with vermilion, repeating the layers where a raised surface is required. The gold in powder is put on with a cotton bat, the gold leaf with a brush, the most delicate strokes being made over it with charcoal smoke floating on oil, with fine hair pencils; sometimes camphor is used in the red priming to set the gilding. This ware was formerly exported in considerable quantities, but partly owing to the liability to injury on the passage, and being superseded abroad by papier-maché and other wares, the exportation is now under \$25,000. The exports consist of fans, waiters, chess-boards, work-tables, segar-boxes, tea-trays, teapots, &c. The patterns worked on them affect their sale, and the least scratch spoils the varnish. There is a kind called *Súchau* ware, made by mixing the varnish with stick-lac and cinnabar, laying it on the wood two or three lines thick, and then carving figures in relief in the metallic paste; the pieces are rather costly, and admired chiefly for their delicate carving. The lackered-ware made by one or two establishments at Fuhchau, should be noticed; the pieces resemble the Japanese in lustre; from whom the workmen are said to have received some instruction a long time ago.

LAMPWICKS, 燈草 *tang tsáu*; also 燈心 *tang sin*. The common people use the pith of a species of junco or rush-grass for the wicks of their water lamps. The grass is extensively cultivated for weaving into mats at the north. Latterly, the demand for these lamp-wicks has been greatly increased by the extended consumption of pith hats, of which they form the inside layers, pasted on sheets of paper.

LEAD, red, or minium, 紅丹 *hung tan*, or 鉛丹 *yuen tan*, is made by continued calcination of lead into massicot, or 黃丹 *hwáng tan*, and then into minium. It is very pure, and is used by glass-makers and painters; care must be taken that it is not mixed with oxide of copper. The exportation is insignificant, nor is the native consumption great.

Lead, white, or ceruse, 鉛粉 *yuen fun*, is made chiefly at Canton. Sheet lead is put into large jars with vinegar obtained from samshoo, and a cover luted on; a slow fire is kept up for a month, changing the vinegar, if necessary, until the lead is entirely carbonized. The powder is then levigated, dried, and pressed into cakes of a snowy whiteness; it is often adulterated with gypsum, lime, or flour. It is used in cosmetics, and mixed with wood oil for a common paint, which soon turns a dingy gray; the exportation is trifling, but considerable quantities are bought by shipmasters for their own use.

LEATHER ARTICLES, 皮器 *pí kǐ*; *green leather 綠皮* *lǜ pǐ*. The skins of all domestic animals are tanned for various uses of dress and manufactures. The purses and tobacco-pouches of the poor are of leather. Trunks are covered with white hogskin in the northern parts. The Chinese are not skilled in tanning, and destroy the vitality of a hide by using lime and urine in curing it.

LICHEES, 荔枝 *lǐ chí*; dried **荔枝乾** *lǐ kán*. The fruit of the lichee (*Nephelium lichi*) is sun-dried when ripe, and then largely exported from Kwangtung and Fuhkien to the northern provinces, where the tree is unknown. The pulp is sweet, and the dried nuts are esteemed among the rarities suitable to form a part of the presents sent at marriages and other festive occasions.

LILY FLOWERS, 金針菜 *kin chin tsai*, i.e. gold pin vegetable; lily seeds **蓮子** *lien tsz'*. The first of these two are probably the dried flowers of some plant of the liliaceous order, perhaps a *Fritillaria*. They are used medicinally, and are worth about \$8 a picul. Lily seeds are the dried nuts of the *Nelumbium*, or beautiful water-lily.

LIQUORICE, 甘草 *kán tsau*. This plant is placed at the head of simples in the Chinese Herbal, and is generally mixed with other plants in the medicinal broths and infusions, which native herbalists give their patients. It is common in the southern provinces.

LUNG-NGAN or lung-yen seeds, 桂圓 *kwei yuen*; without the stone **桂圓肉** *kwei yuen jáu*. This tree (*Nephelium longyen*) is more easily raised than the lichi. The fruit is much inferior to that, but very abundant throughout the southern coasts and provinces; it is called *lung-yen*, or "dragon's eyes," from its globular shape. These two commodities form articles of internal trade only.

MANURE cakes 坑砂 *káng shá*. Poudrette is prepared from night-soil mixed with earth for exportation. The refuse of ground-nuts, sesamum, rape-seed, and other oleaceous seeds, is prepared for manure and for feeding swine and sheep, and sent from one part of the country to another.

MARBLE SLABS, 雲石 *yun shih*, or **花石片** *huá shih pien*. The slabs are about an inch thick, and from 12 to 30 inches square. The kind most commonly exported is a coarse-grained, blue clouded, primitive limestone, quarried in Sháu-king fú, northwest of Canton; it is used for floors and pavements, and ten are estimated to weigh a picul. A coarse whitish marble quarried in Yunnan, veined and clouded with epidote or manganese, is common; it is used in fancy furniture; if the veins resemble a tree, a hill, or animal, the value is greater, and skillful workmen often make a good imitation on plain stone with acids and metallic salts. The demand for carved furniture has increased the supply of the red breccia marble for table tops, seats, &c.; and shopmen easily furnish pieces six feet long. It is brought from Fuhkien and Yunnan, and is seldom sent abroad in slabs. Pretty slabs of a black marble with veins of a whitish or yellowish tinge, and others of a pure black, are both set into furniture with good effect. Tiles of various sorts have in some seasons been largely exported. The large earthen tile measures a cubit square, and is used for floors and pavements.

MATting, 草蓆 *tsau sih*, or **地蓆** *ti sih*. The consumption of matting among the Chinese is beyond calculation, if we include all that is used for bedding, wrappers, coverings, awnings, sails, &c., for which they use it where other nations have cloth or leather. A very tall grass (*Arundo mitis*) used in weaving mats, is cultivated in the lowlands in all the south of Kwangtung, but the people in other parts of the land weave them of other grasses, such as the *Eriocaulon quadrangulare*, the *Scirpus capsularis*, or the *Cyperus elatus*. This department of labor employs myriads of workmen. The culms of the *Arundo* are sometimes five feet high, but the matting is seldom more than four feet wide. The loom used about Canton is an upright framework, with a cylinder above and below, over which the warp of hempen threads runs; the woof is plaited in without a shuttle, and the straw dyed before weaving. The kinds commonly exported to the United States and South America are plain white, and red checked; they are put up in rolls containing 40 yards, measuring 1 yd., 1½ yd. and 1¾ yd., wide, and each one should be packed dry. The exportation from Canton is more than 39,000 piculs annually, at an average price of \$4 per roll; the sorts sell from 8 to 20 cents a yard. The thin matting used for sails and box-coverings is woven from the *Coix lachryma*. A coarse whitish kind of matting suitable for awning and floor coverings, is woven in the northern provinces from a water grass allied to the *Arundo*; it supplies the place of felt on the tiled floors, and serves many useful ends in the farmyard and shop.

MATS, 蓆子 *sih tsz'*; rattan mats for table **藤墊** *tang tien*, or **碟墊** *tieh tien*; bamboo mats **竹簾** *chuk lien* and **竹蓆** *chuk sih*. These are woven in different ways and degrees of fineness, chiefly for home consumption. The sort which covers tea-chests brought from the interior resembles coarse basket-work; other varieties, as door-screens, window-blinds and curtains, are made of fine splints of bamboo connected by thread, and often exhibit prettily colored figures on a green ground. The most durable grass mats woven from a species of *Juncus*, come from Lientan near Ningpo, in pieces 6 ft. long by 4 ft. wide. The whole exportation of rattan mats is very trifling.

MELON SEEDS, 瓜子 *kwa tsz'*. The dried seeds of the watermelon and other sorts of melons, gourds and squashes, form an extensive and peculiar item of trade in China, from the fashion of people to peel and munch them as they are chatting and passing the time. Considerable practice is required to become skillful in the art of politely peeling them. They are worth about \$3 a picul.

MOTHER-O'-PEARL WARE, 雲母殼器 *yun mú kuh ki*, is exported in small quantities; seals, fish-counters, card-cases, fan and screen handles, rosettes, silk-winders, and other knickknacks, are among the articles. The fragments and inferior shells are consumed in making pearl buttons, a branch of trade that has been much lessened by foreign skill. No data as to the amount of the exportation are available, and the ware (except the buttons) is carried away in small parcels. The delicate carving and skill exhibited in making the pieces, render this ware always in demand, and good shells sell readily. The naker of the haliotis and fresh water clams is employed to some extent in making inlaid lackerware, in which the Japanese excel the Chinese.

MUSHROOMS, 香菌 *hiáng kiun*, or **香信** *hiáng sin*; fungus or agaric **木耳** *muh'rh*. The word *kiun* means mushrooms, toadstools, and such like fungi, nor does the adjective *hiáng* or fragrant, here used, limit them to a single sort. The Chinese, and especially the priests, eat many kinds, and employ others in medicinal preparations; the *Sphaeria sinensis* and *Lysurus mokusin* are two kinds known to their herbalists; the former of these often grows from the bodies of caterpillars as a fungus, and is therefore regarded by the Chinese, like all singular productions, as a wonderful remedy. The article that passes through the custom-house under the name of mushroom is intended for food, and often worth about \$40 per picul; agarics are cheaper, but there is much uncertainty in these two articles.

MUSK, 麝香 *shíe hiáng*. Genuine musk is rare and costly, on which account it is often and much adulterated. It is found on a bag near the navel of an antelope (*Moschus moschifera*) inhabiting Tibet, Yunnan, and Sz'chuen; but it is probable that musk is obtained from several kinds of deer in China, Annam, and Asia. Good musk is of a dark purplish color, dry and light, and generally in smooth, unctuous grains; when rubbed on paper, the trace is a lively yellow, and no grittiness is felt or residue left, its taste is bitter, and its smell strong and disagreeable to many persons. The true bags weigh about 25 grains, when well prepared and dried; they are often counterfeited by those of skin, but these have a paler color than the true, and the hair is uneven. The degree of purity and strength can be ascertained by macerating the drug for a few days in spirits of wine, to which it imparts a strong scent. Musk is often adulterated with a kind of brown unctuous earth, heavier than the real secretion, or with clots of the animal's blood; and every bag should be opened. An inferior sort is sold at Shanghai, having gray, large grains, and the hair nearly all removed from the bags. The average exportation is about 1200 catties, at \$60 a catty, but none passes the custom-house. It is used for perfumery and medicine. An inferior sort is found in the Indian markets, and a still baser kind is brought from Russia.

MUSK SEED. These are the fruit of the *Abelmoschus moschatus*, which grows in China and other countries. The Arabians use them to give flavor to their coffee; the powder is used in perfumery. The seeds are flat, kidney-shaped, about the size of a large pinhead, and have a considerable odor of musk, with a slightly aromatic, bitterish taste. The black and musty seeds are not good; a grayish color is the natural one. They are now carried to Europe from Ceylon and South America.

NANKEN, 紫花布 *tsí huá pú*; **土布** *tú pú*, or **赤布** *chí pú*. This durable cotton cloth is so named by foreigners from Nanking, where the manufacture is said to have begun. It is woven from the reddish cotton grown in Kiangnan; the looms of Kiangsú produce the best. There are many varieties and qualities, those manufactured in Canton and Fuhkien are of an inferior quality; but the Chinese article still maintains its superiority in color and texture over the imitations of other countries. The fabric can be proven by plunging it in a boiling solution of campeachy wood, which does not change its hue, while the foreign turns violet. The price varies from \$45 to \$90 per hundred

pieces; they are about $7\frac{1}{4}$ yds. long by 15 inches wide, but are woven in lengths of 75 yds. on one loom. This cloth is much worn by the Chinese themselves, who usually dye it blue. The exportation is less than it was fifty years ago, and chiefly to the United States, Europe, and the Indian Archipelago. Nearly three million pieces were shipped from Shanghai in 1859, most of them for southern China. The other cotton fabrics of the Chinese are coarse canvas for sails, used everywhere north of Fuhkien, a kind of calico woven in Kwangtung of imported cotton, and a variety of thinner tissue, and some lace.

NUT-GALLS, 五倍子 *wá pei tsí*, come chiefly from Siúchau in Kwangsi, and are produced by insects upon a tree called the *yen fá*, the *Rhus semi-alata*, a plant belonging to the same genus as the varnish-tree. The galls are oblong, rough and tubercular, the shell hard, brittle and gummy, and the hollow centre has a cottony ball, the covering of the pupa. They are used alone to a large extent to dye silks black, or mixed with cochineal and other colors to produce gray, brown and fawn. They are exported to Europe at from \$4 to \$8 per picul. The galls obtained in Japan are rather smaller than the Chinese, but appear to be obtained from the same tree.

OIL, 油 *yú*; bean oil 荳油 *tau yú*, tea or camellia nut oil 茶油 *cha yú*; wood oil 桐油 *tung yú*; cotton-seed oil 棉油 *mien yú*; and sesamum oil 芝麻油 *chí má yú*; also olive oil, 生菜油 *sang tsái yú*; ground-nut oil, 花生油 *hua sang yú*; cabbage or rape oil, 菜油 *tsái yú*, fish oil, 魚油 *yü yú*, and others. The exportation of oils is trifling, but the internal trade is enormous. All those here mentioned are used in cooking, except the acrid oil of the *Elæococca* or *tung shü*, of which two species are cultivated for their oily nuts. The *Brassica chinensis* is cultivated in the central provinces for its oily seeds, which furnish much of the oil used there. In making pea-nut oil, the ripe nuts are first crushed by heavy rollers on a granite floor; the powdered mass is then poured into bags to be steamed a short time, before putting them into the troughs. These are hollow trunks of trees, grooved lengthwise to admit the wedges, and to allow the oil to run out. Iron rings separate the bags, and some straw is also inserted between them. Pieces of wood are then placed on top, and the wedges driven down upon them by beetles and rammers, which are swung against the top with great force. The mills for pressing oil out of other fruits and grains are similar in principle. The cake is sold for manure and fodder. These oils range from \$4 to \$8 per picul, and the cakes at \$1.50. Rape oil is brought from Japan.

OILED PAPER, 油紙 *yú chí*, is the common bamboo paper prepared by first slightly soaking it in clear oil, and then brushing it over with another coat and drying. It is too tender by itself for wrapping-paper, but serves to envelop goods, and protect them from insects and moisture. Packing-boxes of silk, garments and other articles are lined or wrapped with it.

OLIVES, 橄欖 *kán lán*; dried are 乾 *kien*, salted are 鮮 *sien*; the seeds are called 欖仁 *lán jin*. These are the fruits of two species of

Canarium, the *pimela* and *alba*, whose affinities ally them to the capai-va tree; they grow throughout the southern provinces of China and Annam, furnishing abundance of a hard pulpy drupe. The white variety is the best. Enormous quantities of the fruit are preserved with salt for food. The stony kernels are often carved into beautiful beads, especially those selected for this purpose at Amoy. The timber of both sorts is good for furniture. The Chinese olive has no affinity with the true olive, the resemblance in shape alone has given it the name.

OYSTER-SHELL, 蠔壳 *li koh*; also called 明瓦 *ming ya*. The use of window-glass is still limited in Chinese houses, notwithstanding it has so long been manufactured. In the north, paper is employed to cover the sashes, but at the south the flat diaphanous valves of the *Placuna placenta* take the place of glass and paper for windows among the poor. They are cut square, and laid like tiles with their edges overlapping, the row being held by strips of wood lengthwise in the sash. These shells are abundant among the Philippine islands, and are worth about \$3 for ten thousand. The bay of Tamblegam, near Trincomalie, supplies great numbers of these shells, many of which furnish a diminutive pearl that is sought after.

PAINTS, 色箱 *sih siang*, are neatly put up in boxes, and a few are sent abroad. They are of different sizes, the largest presenting a collection of sixteen colors, both in cakes and in powder, with a complete assortment of pencils, a bit of fine glue, India ink, a mortar and pestle, cups and saucers, all arranged compactly. Great care and experience are needed in selecting boxes of paints, as the colors are often mixed with gypsum, or otherwise simulated.

Paint, green 漆綠 *tsih luk*. This is made by triturating malachite to a powder, and mixing it with white lead and oil; green relieved by white and gilding is the favorite hue of the Chinese for the interior of their houses and boats. Malachite is also employed in painting and coloring porcelain and glass. It is found in many provinces, and sells at Canton at about \$60 a picul.

PALAMPORES, 棉皮胎 *mien pi tai*. A word of eastern origin, applied to the quilted and padded bed-covers which the Chinese and other orientals wrap themselves in at night. They are made of flocked cotton slightly sewed together and covered with cloth; they usually weigh 6 to 8 catties, and sell for \$2.50 apiece on the average. The Chinese use no mattresses on their beds.

PAPER, 紙 *chi*; wrapping paper, 沙紙 *sha chi*; Nanking paper, 京院紙 *king yuen chi*; coarse paper, 粗紙 *tsu chi*. There is no need of describing the preparation, and noting all the numerous sorts of paper made by the Chinese out of bamboo, mulberry, hibiscus, cotton, hemp, refuse cotton, and rice straw, or detailing the uses to which they are applied. Its manufacture from bamboo or bark is placed about B. C. 175, though the data are not altogether certain. We refer for particulars to M. Rondot's paragraphs in the *Etude*, page 187. The bamboos are soaked in mud tanks until they soften a little, when they are cut small and mixed with lime and water to further soften them; they are then pounded in mortars to a mash till the woody fibre can be

separated by sieves; the pulp is then boiled awhile, and when thickened is taken off in sheets in hand-molds. If it is required, the sheets are sized by saturating them in a solution of alum mixed with a little glue, and dried by rubbing them on smooth boards or a warm plastered wall. The exportation to India and the Archipelago is principally of this kind. That sent to Europe for India proofs of engravings is the same sort, unsized. It is glazed for writing paper by waxing the sheet, and afterwards rubbing it with a smooth stone; two and three sheets are made into one thick sheet for ledgers or other account-books, by the same process, after wetting the inner surfaces with glue water, and drying the sheet in the sun. The thin paper, called Nanking paper, manufactured from cotton, is tougher and more flexible than the bamboo paper, but it is not sent abroad. The Coreans furnish the northern Chinese with great quantities of coarse, tough paper, useful for wrapping paper and a substitute for window glass.

The stationery of the Chinese is put up with great neatness; the devices and coloring of their note and letter papers, envelopes, cards, bills, &c., deserve great commendation. Great quantities of coarse paper are made from straw and other cheap substances to mix with mortar; white paper is also collected to cut up fine to put into whitewash. The paper hangings possess some merit, and are in general use in the north. The consumption of paper among the Chinese is very great, and foreigners in the East also use much, on account of its cheapness and less liability to injury by the climate; foreign paper sized with glue spoils after a while.

PEARLS, 假珠 *kia chú* or **珍珠假** *chin chú kia* and **草珠** *tsau chú*. True pearls are artificially produced by the people of two villages near Tehtsing hien in Chehkiang, by inserting dried pellets of mud mixed with the juice of camphor-seeds between the valves of a flat broad shell (*Mytilus cygnus*) on both sides of the animal as it lies in the shell. The shells are then returned to the water and left in the ponds for about six months, when they are taken out, and the irritating substance found to be entirely or partially covered with naker like a pearl; it is then cut out from the shell and trimmed for sale. False pearls are manufactured at Canton by macerating the scales of a sort of carp (*Cyprinus gibelio*), and mixing the nacreous paste with fish glue; small glass beads are put into this paste, warmed up to a proper degree, and covered to resemble pearls. Chinese ladies use them in strings upon their heads, and also as a setting on headbands, necklaces, &c., for this is the favorite ornament throughout all classes, the pearls contrasting admirably with their black hair. False pearls are packed in picul boxes, each containing 100,000 pearls, and are exported altogether to India and the Straits, where they are used for ornaments.

Pearls, 洋珠 *yáng chú*, known in commerce as seed pearls, are brought from Bombay to the value of \$300,000 and upwards annually. They are sorted by their shape and size, the smallest being taken by fanciful invalids as a medicine. The fishery at the Arrow Is., east of New Guinea, furnishes a part of the pearls used in China.

PEEL, orange, 陳皮 *chin pt*; pumelo peel **柚皮** *yú pt*. The peels of all varieties of oranges are dried by the Chinese for their bitter

quality; the boiled decoction, or the extract made by soaking them in spirits, are supposed to allay febrile action. The skins of the *Citrus margarita* or 柑 *kán*, are deemed the best, but others are found in drug shops, as the *Citrus fusca* 枳殼 *chi koh*, the *Citrus microcarpa* 青皮 *tsing pi*, and another species known as 橘白 *kiuh peh*.

PEPPERMINT OIL, 薄荷油 *poh-ho yú*; the leaf is 薄荷葉 *poh-ho yeh*. This is distilled from the leaves of several species of *Mentha*, as the *crispa*, *piperata*, and *pulegium*. It is lighter than water, and is put up in toy bottles, holding about a spoonful. The oil itself sells for \$8 per catty. The best is made at Canton.

PICTURES; oil paintings, 大油漆畫 *tá yú tsai hwa*; pith paper pictures, 蓬紙畫 *tung chi hwa*. There are many shops in Canton, Whampoa, and Hongkong, where maps and charts are copied, and a few where portraits are taken. Lamqua, who received instruction in perspective from Mr. Chinnery, is the best known artist among the natives. Portraits, landscapes, and scenes are copied in oil, in large quantities, priced from \$3 to \$100 apiece; pictures and engravings are accurately copied, and some of the views and Chinese landscapes are tolerably drawn. Copying miniatures or engravings on ivory forms a branch of industry of some importance; the finer specimens are very beautiful. Outline designs in India ink, representing the crafts and professions among the Chinese, are sold in books at a cheap price; they were designed by Tingqua of Canton, and possess considerable merit. Of all these the number annually carried away is very great, and their manufacture furnishes employment to hundreds of workmen.

The paintings on pith paper (or rice paper, as it is erroneously called) are well known. The material is the pith of an araliaceous plant named *Aralia papyrifera* by Hooker, brought from Yunnan, Formosa, and Fuhkien, in leaves or in its original state. After soaking a while, it is cut round and round into sheets by sharp thin knives, and pressed smooth. The largest sheets are over a foot square, and all the best are used for painting, the smaller pieces being employed by the makers of artificial flowers.

POTTERY, 審貨 *tau ho*; earthenware 瓦器 *yá k'í*; 缸瓦 *káng yá*. Under this head is included a vast assortment and amount of coarse earthenware, of which the poorer natives make their cooking and household utensils. The charges for freight forbid it to be carried far, and manufactories of it are common; that for Canton is at Shih-hwán, where are made pots, dishes and jars of every needed shape and size, some of the latter as large as hogsheads, glazed and unglazed, together with a large variety of imitation grotto work and figures for gardens, gallipots, little images, &c. The ware sold at Shanghai is different, and some of it superior to that made near Canton, while that from Fuhkien is unlike either. The export is of course small; fancy tea and flower-pots, glazed tiles for balustrades, roofs and floors, and a few grotesque but spirited statuettes.

The plain and colored tiles for roofing are seldom exported, even from one part of the country to another. Green, blue and yellow are the only colors made, the latter denoting imperial buildings; all are durable when carefully laid, and impart a peculiarly lively appearances to groups of buildings that is worthy of imitation.

PRESERVES, 蜜餞 *mih tsien*, **糖薑** *táng kiáng*, and **糖菓** *táng kwo*. The Chinese candy many things which are not considered fit for such purposes elsewhere, as millet seeds, bamboo shoots, slices of the lily root, &c. Ginger sweetmeat is the most common export. When good it has a bright appearance, a dark red color, and small pieces are somewhat translucent; if the roots are too old, the preserve will be stringy, tough and tame. The jars called *chowchow* sweetmeats, contain a variety of roots and fruits. Other kinds of conserves and jellies, as whampee, guava, pear, citron, loquat, kumquat, oranges, &c., &c., are also sent abroad. The jellies are mostly made of pears, whampee, and mangoes, put up in gallipots, 24 in a case. The syrups are in bottles, 12 in a case.

RATTAN-WARE, 藤簾 *tang lien*, **藤蓆** *tang sik*, **藤器** *tang ki*. Table-mats are made in sets of six each of different sizes, or in full sets of 30 for a dozen plates; the exportation at present is on the decline. Other sorts of rattan-ware consist of chairs, open and covered, baskets of many shapes, and with compartments, and other small articles; chairs and chair-seats, and strips for cording, consume more than all the fancy ware exported; next are ropes and the large mats in which the people wrap their bedding.

RATTANS, split, 藤條 *tang tiáu*, or **藤肉** *tang jáu*, are made by hand, cutting the whole rattan into threads of different sizes, first by running a knife through it, and afterwards reducing the strips to threads by pulling them through holes in an iron plate. The labor of making them of a uniform size is considerable, and is done mostly by women, and those who weave table mats. The export to the United States is steadily increasing; a good article is worth about \$12 a picul.

RHUBARB, 大黃 *tá huáng*. This drug is the dried roots of several species of *Rheum*, especially the *palmatum*, which furnishes the best, the *rhaponticum* and the *rhobarbaricum*, all of which grow in Siberia, Tartary and China; from Central Asia, it is carried both to St Petersburg and Smyrna. The rhubarb at Kiakhta is collected in Western Kansuh, Koko-nor, and along the slopes of the Kwanlun Mts., while that sold in Canton is gathered in Sz'chuen, Shensi, and Eastern Kansuh; the varieties known in commerce depend on the age of the root, the soil, and care used in curing it. The Chinese dig the roots early in the spring, before the leaves appear, cut them into long flat pieces; dry them for two or three days in the shade; and then string them on cords to dry thoroughly in cool places. Rhubarb is often spoiled by moisture in drying, when it becomes light and spongy; it is liable also to be eaten by worms. Good rhubarb is yellowish, of a firm texture, when cut has a lively, reddish, white mottled appearance, and is perfectly dry. The taste is bitter and unpleasant, and the smell somewhat aromatic. If, when chewed, it becomes mucilaginous, it is not good; it also imparts to the spittle a deep saffron tinge. If black or green when broken, it ought to be rejected, as the good is slightly wrinkled, feels solid, and the fracture is clean and veined, and crisp to the teeth. The price of rhubarb varies from \$38 to \$40 per picul for those roots cured without splitting; and \$50 to \$65 a picul for the cut. Upwards of 2500 piculs are now annually exported.

RICE, wheat, and *all grains*, 米麥雜糧 *mí, mēh, tsáh liáng*; also collectively called 五穀 *wú kuh*. The importation of rice is encouraged by all possible means, more than of other kinds of grain, from its being the principal article of food. Formosa, Luçonia, Siam, Bengal, Saigon, Arracan, and the Indian islands, especially Bali and Lombok, supply great quantities. The price given for cargo rice varies from \$1½ to \$2½, rising in seasons of scarcity to \$3½, and for very good to \$4 per picul. It is illegal to export rice, and the shipment of it from one port to another requires a special application and permit; one reason for this is the responsibility laid upon the local magistrates to keep their own districts supplied with food. The trade in wheat, maize, and millet has hitherto been so trifling as to attract no attention.

ROUGE, 胭脂 *yen chí*, is understood to be made from the safflower (*carthamus*), which is widely cultivated as a crimson dye for silks and other fabrics. The flowers are reduced to a paste, and then repeatedly washed with acidulated water to extract the coloring matter, which is then dried into small cakes. For rouge it is spread upon paper, or lines the inside of small cups.

RUGS, hair, 皮氈 or 皮氈 *pí chen*. The skins of the dog, deer, and goat are cured with the hair on, and afterwards sewed into rugs of many pretty patterns, which serve to some extent for a substitute for carpets. The size is usually about four feet by two, and their warmth and durability are known by travelers and teamsters in the northern provinces; the price is about \$2 apiece.

SAMSHOO, 酒 *tsiú*. This is the general name for distilled and fermented liquors; the word *samshoo* is derived from *sán-sháu* 三燒 i. e. thrice-fired. There are many varieties of liquor among the Chinese, whose distinctions are owing to place, age, and medical qualities. The people have learned the names of foreign spirits and wines, but not their manufacture, and only to a small extent adopted their use. The art of distillation has been known among them from remote times, and rice and millet have been chiefly used by the distillers. The most esteemed spirit is made in Chehkiang, and called *Shduking tsiú*, but the great portion of that drunk is manufactured where it is consumed. The Japanese *saki* is made in the same manner as the Chinese *tsiú*, and drunk to a far greater extent. The Lewchewans distil a superior sort of spirit, which they export to Japan. Among the Malays and Indian islanders, arrack takes its place, and is everywhere obtainable. That made in Batavia is the strongest, and is distilled from a mixture of 62 parts of molasses, 3 of toddy or palm wine, and 35 of rice. The process of making it resembles that for distilling samshoo; the rice is first boiled, and after cooling, a quantity of yeast cakes are added, and the whole pressed into baskets, placed over tubs, and left for eight days; the liquor which flows off is distilled, and then mixed with the molasses and toddy, and all left to ferment for a week in large vats; after the fermentation is over, the arrack is distilled once and again according to the strength required. When pure, this spirit is like whisky in color, and produces the disease and distress among the natives which ardent spirits everywhere cause; its intoxicating qualities are often increased by the infusion of other

substances, as cubebs, hemp-seed, &c. The price of samshoo varies from \$2 to \$4 per picul, up to \$8 for the best kinds.

SALT, 鹽 *yen*. This article has been a government monopoly in China for ages, and the expensive establishments connected with its supervision, manufacture, and sale have probably left little profit to the crown. It is generally obtained by evaporation from salt-water wherever the coast affords facilities for arranging the pans. Tienpeh, Chimmo, Chusan, Chihli, and Formosa, all export it to other provinces, and the salt pits in Sz'chuen furnish much. In Chusan, the water is so muddy that it must be leached through sand and straw before it is fit for boiling down. The Chinese have no skill in purifying it for the table, and that which the people commonly use is crude; it is however not very dear, considering that it is a monopoly—from 6 to 10 piculs selling for a dollar at the pans. The immense mounds of salt in bags piled up near Tientsin, and sold under the oversight of special officers, whose careful efforts hardly avail to remunerate their own outlay and pay up the gabelle, form a standing commentary on the folly of this monopoly.

SANDAL-WOOD WARE, 檀香木器 *tán xiāng mù qì*. The best pieces of sandal-wood are carved into fancy articles, as fans, racks, card-cases, concentric balls, glove-boxes, &c., but nothing definite can be ascertained as to the amount. The fragments are used in distilling the oil, or in making incense sticks. Like all the articles which are included under the comprehensive term of *curiosities*, this ware seldom pays duty, or is reported in manifests.

SEA SHELLS, 螺殼 *lo koh*; insects 虫類 *chung lui*. The shores of the islands in the Indian ocean afford many beautiful and rare shells, which are brought hither in junks, and from the islands along the coast. The assortment of shells at Canton is not so great as might be inferred from the quantities for sale, but by a little search and careful selection, one can easily collect a few score of species, mostly marine sorts, as well as lizards, crabs, star-fish, and dried fish, like the diodon, hippocampus, or pegasus. Few fresh water or land shells are collected, and all of them are injured by scraping and varnishing. Besides shells, as objects of natural history, insects are procurable at Canton, but badly preserved, the antennæ, palpi, and feet are often broken, and the specimens too crowded in the boxes; they are mostly beetles and other coleopterous insects; gay butterflies and any sort of showy insects are also gathered. Notwithstanding these deficiencies, owing to the pretty and variegated appearance of the crowded boxes, both shells and insects, their exportation amounts to many hundreds annually. Precious stones and gems are seen in small quantities, but rather inferior; chrysoprase, malachite, opal, agate, chalcedony, acicular tourmaline, garnet, cornelians, emeralds, and jade, are the most common. Limestone and quartz are selected for their fantastic shapes; but the specimens being usually lackered, are spoiled for natural objects.

SEAWEED, 海菜 *hái tsái*, **石花菜** *shih huá tsái*, or **鹿角菜** *lù koh tsái*, of various kinds is chiefly imported in junks, as well as collected on this coast; the most common brought from the Archipelago is that from which agar-agar is made. Species of *Laminariæ* and *Floridææ*

are collected on the coasts of Japan and Shantung, and cleaned and boiled to a jelly for food; large quantities are used in various medicinal, coloring, and culinary preparations. Since the trade with Japan has been opened, the Chinese have taken myriads of piculs, at prices ranging from \$3 to \$10 per picul, the largest portion of which consists of the *Laminaria* cut and dried in strips.

SESAMUM SEED, 芝麻 *chí má*. This plant is cultivated along the Pei-ho and throughout the northern parts of the country, for its seeds and the oil expressed from them. The seeds are sprinkled on sweet-meats and dried fruits to flavor them; the oil is used in cooking.

SHOES &c., 靴鞋皮緞各色 *hiueh, hidi, pí tuán koh sik*; sandals, 草鞋 *tsau hidi*. Chinese shoes or boots were seldom exported, except perhaps a few embroidered pairs for the use of rich persons in the Archipelago; but since the emigration to California and Australia the trade has increased. Boots are an essential part of official dress, and likewise usually of full dress among the laity. Their thick felt soles furnish a defence against the dampness and cold of the tiled or earthen floors of native houses, which would otherwise injure the health; the article looks clumsy but is more conducive to health than our own thin-soled garment. The native artisans who make foreign shoes employ horse, cow, or buffalo hide, and import enamel leather, calf-skin, and morocco to some extent. The Chinese tan the raw hide with saltpetre and urine, and the leather is consequently porous and weak. Slippers are neatly made of straw, soled with a strip of hog skin. The price of shoes varies from fifty cents to \$2 per pair, and proportionably for boots. Considerable quantities of women's shoes are made at Canton for South America.

SILK. Nanking raw silk 湖絲 *hú ss'*; Canton raw silk 土絲 *tú ss'*; refuse silk 亂絲頭 *tuán ss' tru*, and 天蠶絲 *tién tsán ss'*; organzine or thrown 湖絲經 *hú ss' k'ing*; Sz'chuen yellow 四川黃絲 *Ss'chuen huáng ss'*; reeled from dupions 同功絲 *tung kung ss'*; wild raw silk 野蠶絲 *yé tsán ss'*; cocoons 蠶繭 *tsán kwán*; loss 絨 *jung*; tassels, 緯線 *wei sien*; silk and cotton mixtures 絲棉 *ss' mien*, and 絲毛綢 *ss' máu chau*; ribbons, 絲帶 *ss' tái*; and 欄杆桂帶 *lán kán kwei tái*; thread 絲線 *ss' sien*; satin, 絲緞 *ss' tuán*; crape, 縐紗 *tsau shá*; gauze 紗 *shá*; lustring 絹 *kiuen*; pongee 綢 *chau*; velvet, 剪絨 *tsien jung*; crape shawls, 縐紗搭膊巾 *tsau-shá táh poh kín*. The mulberry is cultivated in all the provinces of China, except the most northerly, and silk is raised wherever the tree grows. The Nanking raw silk is, M. Hedde says, not so called from the city of Nanking, but is an elision of Nantsin-king, i. e. the organzine from Nantsin, the part of the city of Húchau in the N.W. of Chehkiang, where the silkmen live; there are three common sorts, 七里 *tsailie*, 大蠶 *taysoam*, "great worm," and 園花 *yuenhuó*, "garden flower." That from 紹興 *Sháuhing*, a city between Ningpo and Hángchau,

called Shewhing at Canton, is divided into three sorts, viz., 全面 *tsuenmien*, 絨庄 *jung-chwáng*, and 統庄 *tung-chwáng*, which, like the others, are descriptive terms used by the trade.

The three grades of Canton raw silk are mostly named from the town or district in which they are collected. Of the No. 1 sort, there are five varieties, 龍江 *Lungkong*, 龍山 *Lungshán*, 甘竹 *Komchuk*, 黃連 *Wongleen*, and 榜樓 *Laklau*. Of No. 2 sort, the best varieties are 九江 *Kaukong*, 杏壇 *Hangtán*, 沙頭 *Shátáu*, and 葛岸 *Kot-ngon*. Of No. 3 and the poorest sort, there are 小欖 *Siú-lám*, and 桂洲 *Kwaichau*; most of these are names of towns lying west and south of Canton city. For notices of many other sorts, and a detailed description of the growth and manufacture of silk in China, the reader is referred to Isidore Hedde's "Exposition des Produits de l'Industrie Séricène en Chine."

The annual average during the last six years has been 78,500 bales; the prices of best *tsatlee* have ranged at 400 to 450 taels at Shanghai, equivalent to \$525 to \$600 at Canton, for the failure of the crop in Europe has occurred at a time when China was least able to meet it.

In 1854-55, the price of the best sorts of raw silk was from \$280 to 360; for the greater part of that period, No. 1 quality was at \$330. The exportation then to England was 51,500 bales, say 41,000 piculs. The quantity produced to supply the native consumption is so enormous, that notwithstanding the vast increase of the export during the past ten years, the average of prices is lower than when the export was but one fourth of its present amount. The silk-grower looks to the home market for fixing the value of his produce, and prices range according as that demand is active or dull; little or no effect being produced by the foreign exportation, except among speculative holders at the ports.

The export to England is almost exclusively in Nanking kinds, these being of a much finer thread, and possessing a purity of color, a softness, and a lustre not to be found in the silk of the southern provinces. The silk is generally shipped in the bale as originally packed in the interior. To the United States the annual export amounted to about 1800 piculs; till 1862, when it fell to 280 piculs. Successful attempts are making to weave silk piece-goods there; the sorts sent are principally Canton kinds, *Komchuk* and *Kaukong*. The silk is re-reeled and repacked in boxes for shipment. The *filre* is much coarser than the Nanking, and a darker color, but is even and strong. It is chiefly spun into sewing silk, fringes, &c.; while that sent to England is manufactured into piece-goods. Its cost averages about \$2.50 per *lb.* on board. The silk sent to India is mostly of very coarse descriptions, the lowest qualities of Canton kinds, (called in this market *Punjam* silk, from its resemblance to the Indian raw silk of that name,) and bears more resemblance to tow than to the usual kinds of raw silk. Over 2000 chests are yearly shipped to Bombay, and about 300 chests of No. 3 sort to Singapore, where it is woven into scarfs and entire pieces for garments.

The Nanking silk exported to England is shipped from Shanghai. Of *thrown silk* hardly any is exported. The export of *manufactured*

silks to the United States, embroidered shawls to South America, and damasks to India, is now much less than it was in 1855, and many years are likely to elapse before it attains the same importance. The annual value of the shipments to the United States up to 1861, was about \$1,800,000, but has since almost wholly ceased. The prices for goods of equal quality have hardly varied for ten years past, but goods of low cost have been largely shipped at the expense of quality. The principal fabrics are pongees, dress goods, and crape shawls. Of the former the increase in the demand has been steady but moderate, while in dress goods, including satins, checked lustrings and sarsonets, and lining silks, the consumption in America has been immense, and but for the impossibility of inducing the Chinese to use improved machinery, would probably before this have taken the place of French silks in that market. These goods, from lack of such machinery, want the evenness and finish of the French, and their cheapness of cost, and superiority of silk, cannot make up for the absence of those excellencies. The want of this perfect finish to the Chinese goods causes high cost fabrics to be avoided, and the export consists of dress silks, whose cheapness and durability compensate for the absence of a brilliant lustre and distinctness of pattern.

A part of the shipments of crape shawls and scarfs to U. S. are re-exported to Mexico and South America; no statistics can be obtained of the export direct to the latter places, but the value is considerable. These goods require little aid from machinery, depending for their value upon the skill of the embroiderer, and from the low price of labor and excellence of the workmanship, will always be beyond the competition of other nations. The demand for embroidered goods, which decreased from 1835 to 1847, has since steadily increased.

The wretchedness, that seems inseparable from the abodes of the manufacturers of these most costly and luxurious fabrics in other countries, attaches also to the Chinese silk weaver. Like those of Lyons or Spitalfields, the Chinese maker of satin or brocade lives and dies surrounded by squalid poverty and filth; and the beautiful and delicate creations of his loom are produced in a hovel where he digs a hole in the earth to procure sufficient space for his treddle to move. He is, however, more fortunate that the operative of Europe, inasmuch, as in the vicinity of Canton at least, he has little to fear from the winter's cold, and the pittance he receives supplies him with more food than the average pay of a silk weaver in Europe can procure in those dearer markets.

The weavers of piece-goods generally confine themselves to the making of one or two kinds, and are unable to undertake others. Pongees are made in most of the villages between Canton and Fuhshan, 12 miles distant from it, but not in the city itself. Dress goods and satins are mostly manufactured in Canton; and embroidered goods in the neighboring villages.

Apart from these staple articles, there are others made of a more fancy character, as damasks, camlets, levantines, sewing silks, zerges, with brocades and gold-thread silks (which chiefly go to India), &c., but their value is too small, owing to their limited use, to call for particular notice.

SILK and COTTON MIXTURES, called *mien chau* 棉綢, and *sz' mien tsah ho* 絲棉雜貨, are no longer exported, as the beautiful com-

binations now made in western countries, have wholly supplanted them. A common article, half cotton half silk, dyed an indigo blue, is used at Canton for wadded garments, and to some extent for binding books; but it is not so elegant as silk, or so durable as cotton.

SILVER-WARE and GOLD-WARE 金銀器 kin yin ki. Some of the specimens of workmanship in gold and silver found in the jeweler's shops in Canton are very elegant, especially the cake-baskets, bracelets, trays, &c., made in filagree, enameled, nacre, or chased open work. A considerable quantity of silver-ware for the table is manufactured at from 18 to 15 per cent. advance on the weight, according to the amount of ornament. Almost any article of gold or silver-ware can be made in Canton from patterns given to the workmen, and though the table-ware is heavier than foreign, its cheapness recommends it. At the London Industrial Exhibition in 1851, the specimens of Chinese jewelry attracted attention from their grotesque carving and fine filagree-work, rather than for their good taste. No data are obtainable as to the annual exportation, but it is probably not under \$100,000.

SOY, 豉油 shi yú, and 醬油 tsáng yú, is a condiment made from the Dolichos bean, which grows in China and Japan; our name is derived from the Japanese *siyau*. To make it, the beans are slowly boiled soft, and then an equal quantity of wheat or barley flour is added; after this has thoroughly fermented and become mouldy, the beans are washed, and put into jars with their weight in salt, adding some aromatics, and three times as much boiling water as the beans were at first. The whole compound is now left for a month or more, exposed to the sun, and then pressed and strained. Good soy has an agreeable taste, and if shaken in a tumbler, lines the vessel with a lively yellowish-brown froth; its color in the dish is nearly black. There are many qualities of it, and when well made all improve by age. Japan soy is considered superior to Chinese, but both are of different qualities, and are probably made of various materials, some of which may be base enough. It is mostly sent to England, India, and Europe, to form the basis of other sauces and condiments. It is worth from \$4 to \$8 per picul, and goes chiefly from Canton.

STRAW BRAID, 草帽梗 tsáu máu pien, made from a bright light yellow-straw, like oat-straw, has recently been sent to the United States, where it is made up into summer hats. The hats are also made in Canton for shipment. The grass grows in Shantung and Chihlí, where the straw is woven in strips from 300 to 350 feet long.

SUGAR, brown, 赤糖 chih táng; white, 白糖 peh táng; yellow, 黃糖 huáng táng. From the notices in ancient history, it is very probable that China was the first country in which the sugar cane (*Saccharum officinarum*) was cultivated, and the reader can profitably consult M. Rondot's remarks (Etude, page 200) for details on the subject. Among the Chinese, the cultivation of it is followed everywhere south of lat. 30°, to an extent sufficient to supply their own wants, and to form an article of export. The varieties of cane are several, and five species of the plant are mentioned; the *chuk chay* 竹蔗 is the richest in juice. The process of manufacturing it is simple and laborious. The machinery

is rude: two wheels to crush the cane turned by cattle, and three caldrons to boil, thicken, and then granulate the juice, as it goes from one to the other—one fire fed by the crushed cane heats them all; these are all the implements carried to the field. The juice is settled with lime, and afterwards clarified with eggs. The provinces of Fuhkien and Kwangtung are great sugar regions; in Sz'chuen and west of the Tangting lake, the people are supplied by their own growth at about the same prices. The white and brown varieties are each subdivided into three qualities; besides which there is the *kich táng*, a sort of impure molasses, which is consumed on the spot. The manufacture of fancy candy employs many workmen, and some of their landscapes and wedding ornaments are exceedingly pretty; the Chinese themselves prefer candies mixed with fruit and seeds, to those which are merely flavored. Canton and Swatau are the chief ports for sugar; about 45,000 piculs were shipped from the former in 1861, at the average of \$4 for brown, and \$6 for white. It goes to the northern provinces, India, and California.

SUGAR CANDY, 冰糖 *ping táng*, is merely the crystallized sugar. The syrup is evaporated till it becomes red and rather thick, when it is poured into shallow earthen pans, in a hot place; that which crystallizes on the surface is called caked sugar, the underlying mass is like muscovado. It is then boiled again in pans holding a few quarts, adding eggs occasionally, and skimming the liquid, when it is poured into pans to cool and crystallize; these pans have strings and slips of bamboo placed across them to set the crystals. The export goes chiefly to India.

Pingfa sugar 冰花 *i. e.* 'crystal flowers,' is the name given to the pounded and sifted sugar candy, little of which is now exported.

TALLOW; cow's is 牛油 *nú yú* (a term also applied to butter); vegetable tallow is 桐油 *hiuch yú*. The latter has been shipped to England in small quantities. The tallow envelopes the seed, and is obtained in a simple manner. The garbled seeds are put into wooden cylinders with numerous small holes drilled in the bottom, and steamed a few minutes over kettles to soften the tallow; they are then poured into mortars to be gently beaten with stone mallets to separate the tallow, and the whole separated from the kernels by sifting with hot sieves. The tallow, however, still contains the brown cuticle of the seed, resembling coarse linseed meal in color, and is then poured into a cylinder of straw rings laid one on top of the other, in which it is put under a rude machine, and the tallow extracted by simple pressure, flowing into a tub below. The cake and refuse are used for fuel and manuring. The tree (*Stillingia sebifera*) grows throughout the central and eastern provinces, both wild and cultivated; it resembles an aspen in foliage. The purified tallow is put up in cakes, weighing from 70 to 100 catties, and sells from \$7 to \$12 a picul. The wick is wound on a bamboo; the candles are made by dipping, and are white, or colored yellow and red; the best kinds are inclosed in a coating of wax, as the tallow hardens. Lard and suet are used instead of this in the south for making candles, but all these materials are poor substitutes for spermaceti or purified lard. The business of making, painting and coloring caudles, is a large one, on account of their great consumption in religious worship.

TIN FOIL, 錫簿 *seh poh*, is made in the same manner as sheet lead. The metal is poured upon a smooth stone covered with oiled paper, and inclined a little, when the workman instantly drops a second stone, and steps on it to press it thin. An amalgam of tin and quicksilver is used to silver glass; the piece of clean glass is laid on a sheet of silken paper over the foil, and the paper quickly drawn out, leaving the foil sticking on the back of the glass. Tin foil is estimated at half the value of brass leaf; it goes chiefly to India, where it is used by toy makers.

TEA, 茶 *cha*, or **茶葉** *cha yeh* (*i. e.* tea leaf); the English word *tea* is derived from the sound *té* given it at Amoy; the term *cha* is also applied to all the species of *Camellia* by the Chinese, as well as to the tea plant. This is the most valuable and important of all the exports from China. Its infusion has been used as a common beverage by the Chinese for a thousand years, and the plant is now cultivated for the sake of its leaf in China, Corea, Japan and Assam, where it is indigenous; and in Simla, Java, and Brazil, where its introduction has been attempted. It will be enough to refer in this place to the works of Ball, Rondot, and Fortune for the details respecting collecting and curing the tea leaf for domestic use and for exportation, and the modes by which so many varieties are manufactured from the leaves of a single plant. They have shown, that though there are two, and perhaps more, species of *Thea*, black or green tea can be made from either; and that the state of the leaf, the qualities of the soil, the degree of heat applied, and the foreign ingredients employed in the manipulation, account satisfactorily for all the differences perceived in the cured teas of commerce. The old notion that green tea, from its metallic taste and verdigris hue, was cured by drying it on copper plates, (not reflecting that heated copper could give off no rust to affect the tea,) is now rectified by learning that this hue is an artificial coloring put on by the Chinese to imitate their own partially dried and delicate green teas designed for home consumption.

The shrub is cultivated in all the provinces south of the Yellow River, but the eastern ones furnish the best tea, and all which is exported coastwise. The range of hills in lat. 28° N., in the northwestern part of Fuhkien called the **Wú-fí 武彝** or Bohea hills, have long been celebrated for the fine teas they produce, mostly black. A low spur of the same great range, the Nan-ling, extending between the provinces of Chehkiang and Nganhwui, in lat. 35° N. called the Sunglo **松羅** hills, are equally famous for their green teas. These come partly from Hwui-chau **徽州** in Nganhwui, and are known at Canton as the Fyohow teas; others come from Taiping **太平** in the same province, and are brought down to the Yangtz' river at Wuhu; a third class are named Pingshui from a town in Shauhing fú in Chehkiang, about forty miles westerly from Ningpo. The Twankay or Tün-kai **屯溪** teas are from Taiping fú. The two great provinces of Húnan and Húpeh (Oonam and Oopak) also furnish a peculiar class of teas; and the districts of Nganki and Ningyáng (Ankoi and Ningyong) in the western parts of Fuhkien, have given names to two sorts brought from those regions. The appellations given to teas frequently change, and are mostly taken

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from localities where peculiar or fine sorts are cultivated or collected. The terms used among the Chinese are usually descriptive, as *pekoe*, i. e. "white hair," *hi-chun* (hyson) i. e. "bright spring," &c.; while foreign names are oftener known only in the trade, and are taken from places, as Hohau, Sing-chune-kye, Kaisow, &c. The following description of the principal sorts of black and green teas now known in the trade were furnished for this work in 1856 by an experienced tea-inspector.

The most important description of tea is called Congou by foreigners, a corruption of *kong-hú*, through the Amoy dialect, of the words *kungfú* 工夫 i. e. laborer's [tea], or tea on which labor has been bestowed. Since the dissolution of the E.I. Company, the quality of this tea has on the whole improved, though it is much better in some seasons than others; since the political disturbances of the Taiping insurgents in the tea-growing regions, it has depreciated. There are eight varieties of Congou manufactured to supply the foreign demand, each presenting an almost endless diversity of quality. The finest kinds are produced in the province of Húpeh, and are divided into three distinct classes; the best is called *Yang-liú tung* 楊柳峒 i. e. Willow Valley; the middling is 楊柳司 *Yang-liú sī* i. e. Willow township; and the inferior is *Hieh-kia shí* 碣家市 i. e. Hieh family market. The congou from Húpeh is easily distinguished by the appearance of the leaf, which in the finer kinds is large, bold, and black, with sometimes a purple hue; the infusion is a rich deep red, and the flavor mellow and soft. From its delicate nature, so that it cannot bear much firing without losing its fragrance, it is more liable to turn musty than any other kind of congou.

The congou from Húnan province exhibits many differences from the Húpeh. The leaf has a grayish black appearance, and sometimes a reddish tint; it is not a strong tea, and its flavor occasionally resembles tar, of the origin of which there is much diversity of opinion, the Chinese ascribing it to the nature of the wood burned when firing it. There are three classes of Húnan, the best of which is called *Cháng-shau kiái* 長壽街 i. e. Longevity street; the second is *Ping-hiáng* 坪鄉 from the village of Ping; and the inferior or refuse is called *Siáng-tán* 湘潭 from the large dépôt on the River Siáng, about 170 miles from Hankau. Large quantities of all these kinds are annually sent to England.

The class of congous called Moning is so named from the district of Wúning 武寧 in the north-east of the province of Kiangsí, and is also called Ningchau 寧洲 by the teamen in Fuhchau and Shanghai. This kind resembles both the foregoing sorts in appearance; it frequently has an earthy smell and taste, arising from the nature of the soil in which the shrub grows. The best quality is distinguished by the term *Sung-hiang* 松香 i. e. fir fragrance; the leaf is usually small, even, and black, and the infusion strong and of an agreeable flavor.

Another important description of congou, which forms a large part of the export, is called Ho-hau 河口, from a mart of that name at the embouchure of the Kiú-kiuh, a stream flowing from Singtsun into the

Poyang lake, whence the tea can go either to Shanghai down the Yang-tsz' kiang, or to Canton by Nanchang fú in Kiangsai; it is the same sort which, with a slight variation in its preparation, was called Bohea in the early trade of the East India Company. The leaf is a dark red color, very open and coarse, and the infusion a pale red, which increases in darkness as the quality lowers. This sort of tea is also called *Sing-tsun-kíai* 星材街 or Star-village Street, from the entrepôt of black teas on the northern declivity of the Bohea hills, from whence they are carried to Ho-hau.

The best of black teas is called *Kíai-shau* 界首, and the chops are mostly brought to Canton; its quality and mode of curing are such that it will keep for years in a dry climate without deteriorating. It comes in limited quantities from Shú-fang kíai 書坊街, and is distinguished from other sorts by its small red curly leaf with pekoe tips; the infusion is brisk, strong, and richly aromatic.

A variety called *Híá-mei* 下梅 i. e. inferior Hungmuey, is now rarely to be procured of genuine leaf. Most of it is sent to Sing-tsun-kíai, where the teamen buy it up and mix it with other teas for the foreign market. Its flavor is light and pleasant, and the leaf is black and curled.

Another sort, called *Tsáu-tun kíai* 曹墩街, is also grown on the Bohea hills; it has the flavor peculiar to the Ankoí teas; the leaf is mixed, and has a greenish hue after infusion.

Of late years there have been some attempts made in Kwangtung province to produce an imitation of the genuine congou, which is called *Tai-shan* 大山 or Taysaan congou. It has a very strong, highly fired, malty taste, and often looks better than the best "Nanking" teas. It was of some importance in the Canton market three or four years since.

SOUCHONG is a corruption of *siáu-chung* 小種 i. e. "small sort," and has nearly as many varieties as Congou. The leaves usually exhibit a reddish tint, and the infusion is of the same color and pale. The best comes from Shú-fang kíai, where the Kiai-shau congous are grown; inferior sorts are brought from the same districts as the *Híá-mei* and Ho-hau congous.

PEKOE is a corruption of *peh-háu* 白毫 i. e. "white hair;" and consists of the earliest leaf buds, collected as they are just bursting in spring, while the down is not yet changed; the best has a soft downy appearance. It is the most delicate of all black teas, as the process of firing destroys the flavor; in selecting it, that is to be preferred which has the most downy leaves, or flowers as they are called, the liquor being of secondary importance. There are four varieties of Pekoe exported; the best or true *Wú-tí* 武彝 from the original Bohea hills; the *ki-ling* 旗嶺, which has open black leaves mixed with the blossoms; the *siáu-chí* 小池 i. e. "small pool" pekoe, from Tsáu-tun kíai, which has green leaves mixed with it, and is destitute of flavor; and lastly, black leaf Pekoe, which is now rarely sent abroad. There is a variety

called Hyson Pekoe, composed of the most tender buds, and used by the Chinese for presents; the least dampness turns it musty, and it has rarely been seen out of China.

CAPER, or *Caper congou*, or *chú-lán* 珠蘭, is black tea from the district of Ngankí 安溪 in the western part of Fuhkien, rolled into small round pellets, the leaves being made to adhere by weak rice water. It presents a reddish brown, curly leaf, sometimes mixed with a large quantity of dust; the infusion is pale red and weak; and the tea the coarsest of all black teas.

ANKOI SOUCHONG, so called from the same district of Ngan-ki, Onkye, or Ankoí, is another coarse kind of tea, having large, open mixed leaves, of a dark brown color; the infusion is thin and weak, with a burnt flavor. Spurious leaves are frequently mixed with it. When put up in papers containing about half a pound each, it is called Ankoí Powchong. Imitations of both these sorts are manufactured in Canton.

PLAIN ORANGE PEKOE, called *sháng hiáng* 上香 i. e. superior fragrance, is produced in the same district, and possesses the same characteristics as the last two. The leaf is small, close, curled, and of a yellowish hue, with whitish tips like Pekoe; it contains much dust, and the lower grades have brown and dark leaves mixed with them. The export is principally to the United States, very little going to England.

The black teas known as the OOLUNG 烏龍 i. e. black Dragon, are grown in the Ningyang 寧洋 and other adjacent districts, lying a little west of north from Amoy on the confines of Kiangsi; the Kokew Oolung 高橋烏龍 i. e. High Bridge Oolung, comes from a region northward and nearer the Bohea Hills. They both resemble Ankoí Souchong in appearance, are very fragrant, and the infusion is pale and delicate. There is a finer sort grown in Sha-hien 沙縣, a district in the prefecture of Yenping in Fuhkien, of which only a little is brought to market; it has a very long black curled leaf, with a purple tinge; the infusion is a pale yellow, highly aromatic, and agreeable. As high as \$1.50 per pound is sometimes paid for this tea.

HUNGMEUY, or *hung-mei* 紅梅 i. e. red plum blossom, is now in disrepute, and made only in small quantities, the samples shown latterly being deficient in strength. There are four kinds of Hungmeuy, viz. siáu-hú 小湖 i. e. little lake, which has some of the green leaves of Oolung mixed with it; the Tsáu-tun-kiái kind, which partakes of the flavor of Ankoí; the Sing-tsun-kiái kind, which is the best of this sort of tea; and lastly, the Hang-tsz' 杏子 which is brought from the Bohea hills, and is used for mixing with common pekoe for sending to Russia, little or none coming to Canton. Hungmeuy is known by its large, open, straggling, dark brown leaf, and the weak, unpleasant liquor. The best sorts resemble Souchong, and the leaves show downy tips.

Green Teas are collectively called *Luh-cha* 綠茶, and also *Sung-lo cha* from the range of hills. There are three classes, called Wúyuen 武園, Pingshui 平水, and Twankí 屯溪, from the names of three sections of country; teas from these districts are all of superior

quality. Each of them furnish six grades of tea, hyson, young hyson, hyson-skin, twankay, imperial and gunpowder, by winnowing, sifting and garbling by hand. The commonest description of the Wáyuen, or Moyune teas is called *Cháng-hing kung-sí ching cha* 長行公司正茶 *i. e.* common E. I. Company's Hyson; the middling is *chung yen sang cha* 充眼生茶 *i. e.* common fine-eyed tea; and the finest sort is *ching yen sang hi-chun chá* 正眼生熙春茶 *i. e.* best fine-eyed Hyson tea. The teas known as Hwuichau are derived from the whole prefecture, which is several thousand miles in extent, and consequently differ much in quality. Some of them were formerly known as Hiú-ning 休寧, from a district in the prefecture. The three varieties of Taiping teas are mostly inferior to the others; they are named *cháng hing cha* 長行茶 or common; *sháng cháng hing cha* 上長行茶 or superior common; and the best kind is called *yen sang cha* 眼生茶 *i. e.* eyed fresh tea. Some of the names formerly familiar to the tea-tasters as designations of classes of green or black tea have been changed for others, but nearly all such names are geographical.

YOUNG HYSON, once called *uchain*, was formerly the finest kind of green tea, and very little of it was procurable; its name is derived from *yü-tsién* 雨前 *i. e.* before the rains, because it was picked when the leaves first unfolded; though deteriorated, it still is the most important of green teas, and is extensively imitated in Kwangtung province, and not unfrequently adulterated with spurious leaves. Fine Moyune tea is generally of a bright greenish, grayish color, yielding a pale delicate yellow liquor, with a burnt flavor peculiar to each variety of this class. Hwuichau or Fychow tea is darker, and the leaves are speckled with white. Taiping is the most common of green teas; the leaves are also speckled white, and have a disagreeable tarry smell.

HYSON is derived from *hi-chun* 熙春 *i. e.* vigorous spring, and is also called *ching cha* 正茶 or true tea. It has a well matured leaf, curled and twisted, of a bright green color, sometimes glazed; the natural color is pale yellow inclining to green, and the infusion of the best is of a pale straw color, becoming darker as the quality deteriorates.

HYSON SKIN, or *pi cha* 皮茶 *i. e.* skin tea, is the refuse of green teas; the best samples are free from dust, with a large, uneven, twisted, knobby leaf, and the liquor like that of other green teas of same quality. Comparatively little is now made.

TWANKAY 屯溪 is so designated from the river Twan in the district of Taiping in Nganhwui. The leaf is curled, open, and bright, and resembles hyson in make; some chops of this tea are in reality good hyson.

IMPERIAL and GUNPOWDER are foreign designations; the first is named *yuen chú* 圓珠 *i. e.* round pearl; the latter *chí chú* 芝珠 *i. e.* sesamum pearl, from the round leaves. *Hí-chú* 熙珠, *páu-chú* 寶珠 and *má-chú* 蠟珠 are other sorts of these teas. They are

sold together, the former being merely the largest leaves picked out of the whole lot; both present a pale infusion, and the leaves should be rolled round and bright.

Canton Teas is a general name given to imitations of the preceding sorts, both black and green, all the principal varieties being made in large quantities, and some of them extensively adulterated. The best Canton green teas are produced in Hwáng-ho 橫河 and San-to-chuh 三多竹; and diminishing in value as they come from the district of Hwa 花縣, from Taishan 大山, Kaulien 九連, Kih-shui 急水, and Shin-ki 岑溪, all of which are places lying north of Canton city. They are usually dyed, or glazed green by rolling them in heated pans, after sprinkling them with a mixture of prussian blue and powdered gypsum. The blossoms used to scent tea are the *kwei hwa* 桂花 or *Olea fragrans*, the orange, jasmine, Gardenia and Aglaia.

SCENTED ORANGE PEKOE, called *hwá hiáng*, 花香 flower aroma, and *Scented Caper*, called 花香珠蘭 *hwá hiáng chú-lán*, are both made from tea cultivated in Kwangtung. They all go to England, where their consumption is steadily increasing. The former has a twisted black leaf, with a highly burnt flavor; the latter is the Imperial of black teas, and is often adulterated with other leaves, and disguised with deleterious ingredients.

Besides the names here enumerated, there are a few others which occur in books of old date, but have now become quite obsolete in the trade. *Campoi* 揀焙 *kien pei*, i. e. selected for firing, is a delicate species of congou. *Padre Souchong* was a name given to some fine samples of souchong, which were cultivated and cured for presents by priests in the Bohea hills; other names, as *lien-tsz'-sin* 蓮子心 or lotus seed kernels; *tsioh sheh* 雀舌 or sparrow's tongues; *lung twan* 龍團 dragon's pellet; and *lung sü* 龍鬚 or dragon's whiskers, are varieties of souchong and pekoe. *Sonchi*, a corruption of *Sungchi* 松製 or Sunglo manufacture, is now called *caper souchong*; *君眉* *kiun-mí*, or prince's eyebrows, and *tsz' hau* 紫毫 carnation hair, are called *flowery pekoe* in commerce. These are all black teas. The list given above contains nearly all the names commonly given to green tea, which the Chinese do not drink as it is prepared for exportation. The tea sent to Russia is grown chiefly in Sz'chuen and Honán provinces, from whence it is collected by native brokers and carried to Kwei-hwa in the north of Shansi, previous to its transportation to Kiakta. The brick tea 磚茶 *chuen cha*, used in northern Burmah and throughout Tibet, Mongolia, and westward even to Khiva, is also prepared in Sz'chuen, and sold at Sining in Kansuh, Táli in Yunnan, Tà-tsienu in Sz'chuen, and other frontier marts. The maritime Chinese never use it.

The mode of scenting green and black teas varies a little, and the object in view in the operation is to impart the delicate flavor of fine tea to the common sorts. The heated leaves of the cured green tea are poured into a basket two inches deep, and then covered with a layer of

fresh flowers; another layer of leaves and more flowers are then placed above them, until the basket is full, when a thatch is covered over the whole, and remains a day. The next day, the whole mass is fired in a lined sieve for one or hours, and the flowers sifted out just before packing the tea in leaden chests; frequently the highly scented tea is mixed with plain (one catty to eighteen or twenty) to impart a delicate scent. Black teas are sometimes sprinkled with *chulan* (*Aglaiia*) flowers dried by themselves, or even powdered, just before the last firing has been given to the tea, and the whole packed up together for exportation. But the larger blossoms of the jasmine and *kwei hwa* are not mixed thus with the tea, though some may be often seen in lots which have been imperfectly sifted. The cultivation of these flowers for scenting is a branch of agriculture of considerable importance about Canton.

The word chop, (*hau* 號 or *tsi' hau* 字號, a term of common use in the tea trade,) means merely a brand or mark, and is given by the brokers who make up the lots of tea in the country. It is frequently the name of a firm, or merely a fancy appellation applied to each distinct lot of the same quality and origin, to distinguish it from other lots, even of the same sort. A chop can therefore be as few as 2 or 3 chests, or as many as 1200; a chop of congou is usually 600 chests, but other kinds of tea not being so uniform are reckoned by packages, and not by chops. The "chop name" consists of two characters, as *yuh-lan* 玉蘭 (*Magnolia*), *king lung* 興隆 (*Rising Affluence*), *fang chi* 芳芝 (*Fragrant Sesamum*), &c., and has slight reference to the origin or quality of the tea.

The exportation of tea is annually increasing, but the quality of the mass of the leaf has deteriorated during the last four or five years, owing to the disturbances in the tea districts, and impediments met in bringing it to port. The total export coastwise for the year ending June, 1855, was 123 millions of pounds, and about 110 millions the previous year. In 1861, it was only 130 millions, owing to disturbances, and did not equal the demand. In 1845 it was under eighty millions, showing a gradual annual increase to all the consuming countries. It is noticeable that the use of black teas in various places has succeeded that of green, the latter being preferred in newly settled countries, as Australia and United States. The descriptions of tea are intermixed in every variety of combination by the tea-brokers, but not so much among the Chinese. Considering the great amount of this leaf sent out of China, and the facilities for mixing those of other plants before sending it abroad, it must be acknowledged that there is a large degree of mercantile honesty among the manufacturers, who have doubtless found that it is their best policy.

TOBACCO, *yen* 烟 or *yen yeh* 烟葉; prepared tobacco, 烟絲 *yen sz'*, is the leaf cut up, of which the *huang yen* 黃烟 and *shui yen* 水烟 the yellow and water tobacco, are the most common. The plant is an exotic, but now grown in all parts of China; there are two species cultivated, the *Nicotiana Chinensis* and *fruticosa*; Chehkiang and Húpeh, and the districts of Sin-hwui and Nanhung in Kwangtung, furnish the most esteemed qualities; a great amount is exported from Swatau. The leaf is usually brought to Canton uncut, simply dried in the open air,

and tied in bales after assorting. Its color varies from a pale yellow, to a brown and reddish chocolate; and the odor and taste from an acrid sharp flavor to an agreeably fragrant taste; all owing to difference of soil and climate. Chinese tobacco is on the whole weaker than the Manila or American; the uncut leaf and the prepared are both occasionally soaked in a solution of opium to increase their narcotic properties; it is also colored with other preparations. The most common sorts are the *sang*, *shuh*, and *shui yen*, or raw, cured, and water tobacco: all of which are exported to the Archipelago, and to the northern provinces. The leaf is cut with large planes; and cigarettes are made at Canton by rolling it in bamboo paper. None is chewed, and comparatively very little is taken as snuff.

TORTOISE-SHELL; broken pieces 玳瑁碎 *tai mei sui*; the ware is 玳瑁器 *tai mei ki*. There are four kinds of turtle whose shells are collected, but the hawk's bill tortoise is most sought for, the *Caretta imbricata*, a native of the shores of most of the Indian islands; the best comes from Celebes, the Spice Is., and New Guinea. The shell is thicker, clearer, and more variegated than that of other species, and consists of thirteen large inner, and twenty-five small marginal divisions. In Ceylon, the turtle is held over a fire till the heat starts the plates from the back, when they are cut off and the creature set free. In Celebes, the turtle is killed and the carapace immersed in boiling water to detach the plates, and preserve their hues from change. The entire covering is then usually tied in a single package, and afterwards assorted by the purchaser. The middle side-pieces are the thickest, largest, and most valuable to the Chinese, and are less esteemed in Europe; the large best plates are free from cracks or carbuncles, and almost transparent; their value to the fanciful Chinese depends a good deal on the arrangement of the colors. The small, broken and crooked pieces are worthless. The carving bestowed upon the shell by the Chinese is its chief recommendation, for their ware is inferior in polish and finish to the European. The greatest portion of the export is in combs of various fashions; card-cases, snuff-boxes, trays, paper-knives, baskets, and buttons, are also made in the same style as the ivory-ware. The total exportation is probably not less than \$6000, but no particulars of its amount or direction are at hand. More or less finds its way to all parts of the world.

TRUNKS, 皮箱 *pi siang*, or 皮櫥 *pi lung*, generally are made of camphor wood for exportation; five form a nest, and are estimated to weigh a picul; price about \$25. The largest measure about 40 in. by 20 in. wide, and 18 in. deep; they are bound with brass nails, and often prettily painted. Those trunks which are covered with leather are often an inferior article, made of pine, Chinese mahogany, or poor camphor; if they are left open for a while, the odor of the camphor will evaporate in those merely rubbed with the oil. The best are well planed, and then simply varnished. Good leather trunks for the overland passage are now made in Canton, and neat shallow leather trunks which supply the place of valises. The Chinese also make a cheap trunk of coir matting, that is in extensive use, and often exported to the Archipelago. At the north, a light durable wooden trunk covered with white hog's skin, and lined with silk or paper, is in common use, but the weather easily warps and injures them.

TURMERIC, 薑黃 *kiang hwang*. This is the dried root of the *Curcuma longa*, a herbaceous plant cultivated in all the Indian islands, and on the adjacent continent, for its coloring and aromatic qualities. The roots are uneven and knotty, difficult to break or cut, and have a light yellow color externally. The color under the bark is a bright yellow, then reddish near the core, and finally becomes much like that of saffron. It is easily powdered for use, but the dye is very transitory, and no means have yet been found for setting it. It has an aromatic smell resembling ginger, and a warm, disagreeable, bitterish taste. The Hindoos use it less as a dye than a spice in making curries. In packing it, care should be taken that the boxes be secure, as the least damp injures it. Its price put up is about \$5 per picul at Canton; the fresh roots sell for \$2.

TURNIPS, 大頭菜 *tá tau tsái*, i.e. great headed vegetable. This vegetable is cultivated to a great extent all over China, and salted and pickled for sending to other provinces; for the people of distant parts of the empire really have so little intercourse that they interchange many articles of food with each other as delicacies, which one would think could hardly pay their freight. Carrots and radishes are also prepared in the same way as turnips, to a trifling extent.

TWINE, 索 *soh*. This is made of the various species of *ma*, and goes under the general name of hempen twine. The Canton article is inferior and loosely twisted, but that produced at the north, made from the Bohemia, or nettle-hemp, is superior; the twine spun from the fibres of the *Sida* is inferior to both the others.

VARNISH, 漆 *tsih*, is the name of the tree, as well as the sap of the *Vernix vernicia*, or lacker tree. All kinds of varnishes, glazes, and lustrous or clear polishes, are also termed *tsih*; and more than one tree from which such materials are gathered for painting have consequently been erroneously called the varnish tree. The crude juice from the trees or nuts is usually clarified by boiling and settling. The true-lacker varnish is worth from 19 to 25 taels per picul.

VERMICELLI, 粉絲 *fun sz'*, i.e. flour threads. This article, sometimes called *loksy*, manufactured from both rice and wheaten flour, is extensively used among the natives in soups. It is every way inferior to the European.

VERMILION, 銀硃 *yin chú*. This is made of fine cinnabar, which has been purified by sublimation, and is collected in acicular crystals of a bright violet red; it is powdered between two stones turned by hand, mixing a very little water at the time. The sticky mass is then put into pure water, and frequently levigated, decanted, and finally dried on heated tiles or in the sun, when it is sifted for packing. The quality is generally of the best, and the workmen are very particular about the purity of the water. It is used in making Chinese red ink, for painting on porcelain and wood, and coloring candles and paper. Its consumption is enormous, for everything lucky and pleasant among the Chinese, as visiting-cards, things connected with marriages or worship, presents, &c., are colored red. Vermilion is neatly put up in black papers, each containing 8 mace, 8 candareens weight, and enveloped with white paper; 90

of them are contained in a box of 50 catties. The price, for sometime past about \$65 a box, is entirely regulated by that of quicksilver, being generally about 25 per cent. in advance.

WAX, 樹蠟 *shù lán*, "tree wax," or 白蠟 *pai lán*, is collected in Chehkiang, from a sort of *Fraxinus* or ash, on which it is secreted by an insect (*Coccus pela*) as a nidus to protect its eggs, somewhat like the sticklac insect; the trees when covered by the secreted wax look as if snow had newly fallen on them. It is collected after frost, and cleaned from bark and other impurities by melting it on a cloth over boiling water, or in a silk bag immersed in the water. It is mixed with other ingredients to make plasters, but most of it is consumed in making the outer envelopes of tallow candles, adding a very little oil. It melts at 81° Fah., and its hardness recommends it for mixing with beeswax, sperm, or lard in the manufacture of candles; the exportation, however, is still limited to a few piculs to England.

WOOD; piles 椿 *chuan*; poles 梁 *liang*; joists 桁柱 *to chü*. The timber business in China itself is a large item of the internal trade, both up and down the coasts in native vessels, and on rafts along the rivers. Fuhkien produces great quantities of pine, fir and larch, which are floated down to the mouth of the River Min, and thence taken north to the level plains of Kiangnan for house and boat building. The upper tributaries of the Yangtze afford facilities for rafting timber of various sizes to the same regions. The entries through the custom-house at Shanghai in 1861 of poles, knees, sticks, &c., were about 220,000, and at Tientsin in 1862, about 30,000 pieces, much of which were from Japan and Oregon; besides these in foreign vessels, a still larger amount is carried in native craft to the north.

WOOL, 綿羊毛 *mien yang mau*, is an article of trifling foreign or native commerce in China. It is used for stuffing cushions and such things, manufacturing felt caps and carpets, &c., and is obtained mostly at Tientsin.

In addition to the articles mentioned in the foregoing lists of Exports and Imports, there are several still unenumerated, which are occasionally shipped on trial to Europe and India, or form items in the cargoes sent in foreign bottoms on Chinese account. Since the transfer of a great part of the coasting trade from native to foreign vessels, the assortment of articles appearing in the Trade Returns has greatly increased, but one cannot distinguish between what is external and what is internal traffic. Most of the articles mentioned in these Returns, but undescribed in this section, are unimportant as items of trade, though perhaps well worth a particular notice. Among the imports are chalk, bristles, crocodile skins, fish-skins, rose-oil, cocoanut-husk, flax, &c., and a variety of unknown productions classed as medicines, some of which come from Siam, Annam, and the Indian Archipelago, but none of them to much extent. Guano from Peru had begun to find favor in the vicinity of Amoy and Canton, when the better prices obtained on both sides the Atlantic stopped its importation.

The exports which have been omitted in this list are probably of less value collectively than the imports, but none of them require particular description. Among them may be mentioned spangles, flower-seeds,

living plants, fruits, books, drawings and maps, pencils and other Chinese writing implements, coal; and lastly, what might almost be deemed out of place in such an enumeration, notwithstanding the importance of the trade, the carrying of Chinese emigrants and laborers across the Pacific, and to Australia, the West Indies, and Guiana.

An estimate of the total value and quantity of all the exports and imports between China and other countries by sea is almost impossible, owing partly to the uncertainty attending the calculation of nearly every article, and still more to the impossibility of separating between the foreign and coast traffic; it was seen that the value of the table would not be equal to the trouble connected with it. There are some branches of the trade which are not amenable to any consulate, and the returns from the open ports, even if they could be all obtained accurately, would be far from giving the general total, in consequence of the unknown values carried in and out at Hongkong, Macao, and points of illegal traffic, which would vitiate the whole. In 1836, when the entire trade was centred at Canton, the total value of the import trade, goods, opium and treasure, was reckoned at \$38,579,358; and the export in the three articles tea, silks and treasure, at \$35,257,148, leaving less than four millions for sundries. In 1844, the total was underestimated by Mr Robert Thom at fifty millions, by at least ten millions of dollars. A rough estimate at the close of season 1854-55, gave the entire total of the China trade at about 125 millions of dollars.

Since the new treaties and tariff were promulgated, and the trade on the river Yangtze' opened in 1860, the amount of capital and shipping employed in the commerce has rapidly increased, but the value of imports and exports to foreign countries more gradually. If we estimate in round numbers the value of the present export of tea at 35 millions, silk at 33 millions, opium at 68 millions, and raw and manufactured cottons at 27 millions, the remaining imports and exports will make about 37 millions, or a total of 200 millions of dollars, as the value of the trade for the year ending June, 1862. The Chinese coast trade and that to Siam, Japan, Manila, Java, and India, are so connected with the trade beyond the Cape of Good Hope, that the estimates here given have not been, and cannot be gathered from the Customs' returns, but have been derived from those parties who have a general knowledge of the course and value of the commerce.

CHAPTER III.

FOREIGN COMMERCE WITH CHINA.

Section 1.

PORT OF CANTON.

THE rules respecting the management of trade contained in the treaties and commercial regulations already given, are alike applicable to all ports. But there are other rules, applicable only to the ports where they are issued, and liable to be changed from time to time. In this chapter, these rules are given under each port, as they are at present established, with such other information as will be serviceable to the merchant or seaman. A full account of the details of trade at Canton are given; and as many of the same details are applicable to all the ports, a reference to them will obviate their repetition.

A ship, on making the islands off the mouth of the Canton river, will generally see, in fine weather, a number of fishing-boats at some distance from the land. These are liable to be mistaken by strangers for pilot-boats, but the former may be distinguished by observing that they are always in pairs, of large dimensions, with broad sterns high out of the water; whereas the pilots' boats are long and low, with short masts raking well aft, and usually hoist a flag of some sort to make themselves conspicuous to a foreign ship as soon as possible. When one of them approaches the ship in the southwest monsoon, sail should be reduced; and if he happens to miss, it is advisable, even when going six or seven knots, to reduce sail in preference to rounding the ship to, for the eddies and *chowchow water* are often so strong during the freshes, that when a ship heaves to, much time is lost in getting her head to the course again. On receiving one of these pilots on board, no anxiety should be shown to secure him, for they are ready to demand from strangers much more than is usually given. In ordinary weather, ten or twelve dollars would fully remunerate his services for taking the ship into Macao Roads or to Hongkong, but at other times, thirty dollars might not be exorbitant. As soon as a vessel enters the latter port, she will be boarded by the harbor-master's clerk, and directed where to anchor; but in going into Macao Roads there are no regulations of any kind.

After a ship has anchored in Macao Roads or in Hongkong, the captain makes his arrangements for proceeding up the river with his vessel. It is not often that a ship now proceeds from outside directly to Whampoa without stopping, and therefore nothing need be said to the pilot about carrying her into the river. His boat is however usually connected with the establishment of pilots on shore, and he will perhaps inquire

when a river pilot is wanted. Formerly, it was necessary to apply a day beforehand for a pilot, who had to inform the sub-prefect at Casa Branca near Macao, that a foreign ship was about to proceed up the river, give in the particulars of her nation, cargo, armament, &c., and obtain a permit. The rates of pilotage before 1842 were fixed at \$60 for every vessel, whatever might be her size, to be paid when application was made. The establishment then consisted of 22 head pilots, each of whom paid upwards of \$600 for the station, and was made answerable for the character of the ships he conducted up the river, that no men-of-war were smuggled in, nor any obnoxious persons or women on board. There are now 20 head pilots, all of them natives, who are distributed at Canton, Macao, and Hongkong, and who have the whole business, equally dividing their receipts among the three offices.

The authorities at Canton issued a notice in August 1843, allowing any fisherman to act as pilot to a foreign ship, in the same manner as the old regularly licensed pilots, provided he was furnished with a pass. The British superintendent of trade at the same time also issued a notification, requesting masters of vessels to furnish with a certificate such men as they found to be capable; three of these certificates were to entitle him to a pilot's license, which is now furnished by the harbor-masters at Hongkong and Macao.

Comprador's boats sometimes board ships outside as well as pilots; vessels manned by Europeans will find them useful. There is little or no difference in their charges, and it is as well to employ the first who reaches the ship. The business of purveying is in the hands of a few native firms, who have their runners, and are able to drive off competition; probably the ships are as well or even better served through this arrangement. When engaged, they accompany a ship up the river, bring fresh provisions, hire workmen, purchase whatever is wanted, and act as clerks during her stay in port. American ships were, for several years, supplied by a single native firm, of which there now is a branch establishment at Hongkong; but latterly the great concourse of ships at Hongkong has enabled the consignees of vessels to supply them through their own house compradors, which has interfered with the business of the old ship's purveyors. The practical business habits of the Chinese are well seen in the manner in which they will furnish hundreds of ships with provisions and other articles to any extent; and keep the prices up in the market, preventing all competitors, and still regulating the supply according to the demand.

When the river pilot comes on board at Hongkong, the vessel proceeds up to the Bogue. In going through Kap-shui-moon and up Lintin Bay, and in fact in all the channels and passages among the islands, the ship is subject to *chowchow* water; it happening, that while running up with a fair wind, she will be whirled round and round, becoming ungovernable, and oftener that she will not obey the helm, but keep her head stationary to one point for a time; this may cause a stranger to suppose the ship ashore, and induce alarm, but it is only caused by the strong eddies. If she arrives near the Bogue at night, she must anchor off Chuenpe or wherever convenient; if in the daytime, with a moderate breeze, she may heave to, when a fisherman or another pilot will come alongside, who has been on the lookout, to assist the pilot.

These river pilots are connected with the establishment at Hongkong, and receive from them \$5 for piloting a ship to Whampoa, and \$6 for conducting her out, as, in the latter case, they stay by the ship farther outside. The river pilot takes the conduct of the ship, for he knows the channel much better than the other pilot. The entrance of the Pearl River at the Bogue is considered to form the limit of the port of Canton; it is about 45 miles from the city. It is as well to know, that these two pilots, to make one think them clever, or show their abilities, are continually roaring out *port! starboard!* till the steersman gets the helm hard up or down, when they cry out *steady!* and before the helm can be righted or the ship steadied, she is across the tide, which puts her much out of her course, and time is thus lost. It is better for the captain to keep them quiet, and not pay much attention to them, letting them point out which way she is to go, but giving orders to the man at the wheel himself; for the channel being narrow, there is not much room to spare. There is a good deal of difference, however, among the pilots, and some of them are quite competent to carry a ship up the river; others know less of the management of a ship, while they are well acquainted with the channel; at times, whether skillful or ignorant, they are unreasonably blamed by the officers of the ship, and not understanding a good deal of what is said to them, get sulky, and care little where or how she goes.

As the ship approaches Second Bar, the pilot talks about Bar-boats, which are fishing-boats hired for the occasion, and anchored on the knolls, to point out the proper channel, the ship passing between them. The price is a dollar for each boat, and six is a sufficient number for any ship, and six or eight dollars for both the Second and First Bars is a fair payment, although the pilot will perhaps object to it as not enough; many commanders refuse to pay anything for them, and throw all the responsibility on the pilot of getting the ship through. The commander will always find it for his advantage to treat the pilot well, and since the prices of pilotage have been reduced, to allow him a generous sum for bar-boats and cumshaw; for if the vessel is only 150 or 200 tons, the sum of \$7½ or \$10 does not remunerate him, and a ship of 300 tons hardly pays the outlay of the establishment. On the arrival of the ship at Whampoa or Blenheim Reach, the pilot has done his duty, and the pilotage, which is fixed at the rate of 5 cents a register ton, is then due him. It is common to make him a present of two or three dollars, but though not necessary, it is as well to do it, as it is expected, and the regular pay of the pilots at present is little enough. Native boats of all sorts, including even those officially placed by the ship, should be watched, and at night all those not belonging to the customs kept clear of the ship, for many of the boat-people are expert thieves. There is a class of covered row-boats, peculiar to the anchorage, called Whampoa boats, whose people are hired to wait on the ship, go of errands, &c.; they are usually connected with the comprador, and are generally trustworthy. Some of them have been furnished with tickets from the consular authorities, which imposes an obligation on them to be measurably honest, lest they lose it and their custom.

Regulations were issued in August, 1861, for the government of British ships and their crews at Canton and Whampoa, which are placed under the immediate supervision of a Vice Consul, who has his office on board of a vessel moored in the Reach.

LOCAL REGULATIONS FOR THE PORT OF CANTON,

In accordance with Article III. of the order of Her Majesty in council of the 13th day of June, 1853, to secure the due observance of treaties between Great Britain and China.

I.—All rules and regulations heretofore in force to secure the observance of treaties, having reference to the port of Whampoa and Canton, are repealed from and after the date of publication hereof.

II.—The consulate office will be open for public business from 10 o'clock A.M. to 4 P.M. daily, excepting on Sundays and public holidays.

III.—Every British vessel must show her colors on entering the port, and keep them hoisted until her arrival has been duly reported. On anchoring at Whampoa, the master of any British vessel will, without delay, lodge the articles of his crew with the British vice-consul, and within twenty-four hours of arrival he will deposit at her Majesty's consulate at Canton, his ship's register and a copy of his inward manifest. When the vessel is ready for sea, the master will procure from the custom-house a grand chop, and on exhibiting this at the consulate, and depositing a copy of his export manifest, he will receive back the ship's register, on presenting which to the vice-consul at Whampoa, he will receive the ship's articles and an English port-clearance on payment of the regular fees.

IV.—The discharge of guns or other fire-arms from vessels in harbor, as also the display of arms on shore among the villages and people, is strictly prohibited.

V.—All cases of death occurring on board of vessels in harbor, or in the residences of British subjects on shore, must be immediately reported at the consulate office. It is strictly prohibited to throw overboard the bodies of seamen or other persons dying on board a vessel in harbor.

VI.—Stone or ballast shall not be thrown overboard in harbor.

VII.—Any vessels, laden with gunpowder or other combustibles, are prohibited from entering the anchorage, or anchoring within a distance of one mile of it.

VIII.—When a British vessel is ready to leave port, the master shall hoist the blue peter at least twenty-four hours before the time appointed for her departure.

IX.—All offences against the persons or property of individuals, or breaches of the peace, must immediately be reported at the consulate office. Any Chinese subject guilty of a misdemeanor on shore or afloat, may be detained on detection, but information must in such case be forthwith lodged at the consulate office; and in no instance shall British subjects be permitted to punish offenders.

X.—Every British subject residing within the limits of the port, who shall not have been already enrolled in the consular register, shall, upon the promulgation of these regulations, apply at the consulate to be enrolled. And every British subject who may arrive within the limits of the port, save and except any British subject who may be borne on the muster roll of any British vessel, shall apply at the consulate to be enrolled in the consular register. Any British subject neglecting to be so enrolled in the consular register, will not be entitled to claim the protection or intervention of the authorities, unless he can give some valid reason for not being so enrolled.

Save in so far as provided for by treaty, any breach of the above regulations will be punishable by fine, not exceeding five hundred dollars, or three months' imprisonment; and all fines imposed shall be appropriated and applied as provided for in Art. XLIX. of the treaty of Tientsin.

LOCAL CONSULAR REGULATIONS

Relating to the crews of British ships at Canton and Whampoa, promulgated under Article IX. of the treaty of Tientsin.

I.—Masters of vessels in either of these anchorages will be held responsible for the conduct of their crews when on shore on leave. Should any seaman absent himself without permission, the master will forthwith report the same at the consular office, and take effi-

cient measures for the recovery of the absentee. The personal responsibility of the master in the above case will include his liability to make good such amount of damage done to property as to the Consul or vice-consul shall seem fit, provided it does not exceed the sum of fifty dollars (\$50); the seaman himself will be punished for personal assaults or other misdemeanors by fine, not exceeding fifty dollars or three months' imprisonment.

II.—Should her Majesty's consul or vice-consul see fit, he will notify in writing to the master of any British ship that he is not to grant leave of absence to any of his crew to go on shore. Any infringement of this regulation will subject the master to a fine not exceeding fifty dollars (\$50).

III.—Masters of vessels are strictly prohibited from granting liberty on any pretence to their crews to proceed to Canton, under a penalty not exceeding fifty dollars (\$50).

IV.—No British subject may open a boarding-house, or house of entertainment, without the written sanction of the consul or vice-consul, under a penalty not exceeding fifty dollars, or in default one month's imprisonment. The keeper of any licensed boarding-house or house of entertainment harboring deserters, whether British or foreign, or receiving into his house any seaman who cannot produce his discharge, accompanied by a written sanction from the Consul to reside on shore, shall, upon every conviction, be liable to a fine not exceeding twenty dollars, or one month's imprisonment, with forfeiture of license. Every keeper of a licensed boarding-house or house of entertainment, will be held accountable for the good conduct of all inmates and frequenters of his house.

Bye-rules with regard to the above.

The keeper of every licensed boarding-house, or house of entertainment, shall exhibit in a conspicuous part of the house a tariff of all charges.

Such licensed boarding-house, or house of entertainment, shall be liable to be visited at any time by a constable or other person deputed by the Consul or vice-consul for the purpose of inspection.

No licensed boarding-house, or house of entertainment, shall be transferred, sub-let, or closed, without the consent of the Consul or vice-consul.

No keeper of a licensed boarding-house, or house of entertainment, shall under any circumstances enter into partnership with foreigners, nor shall any British subject act as bar-man, runner, or other similar capacity in any boarding-house or house of entertainment, British or foreign, without permission of the Consul or vice-consul.

Any infringement of, or obstruction to the foregoing bye-laws, shall be punished by fine not exceeding fifty dollars, or imprisonment not exceeding six weeks, and forfeiture of license.

V.—Any Chinese selling samahoo or other spirits to sailors, harboring deserters, or in any other way committing a breach of these regulations, shall be dealt with according to Chinese law.

All fines enforced under the foregoing rules and regulations shall belong to, and be appropriated as provided in Art. XLIX. of the treaty.

The American authorities have likewise issued some regulations for the government of the crews of the ships frequenting the open ports, though some of the provisions are applicable more particularly to the anchorage at Whampoa. A consular agent and marshal of the United States reside there, who have authority under the consul at Canton.

RULES AND REGULATIONS FOR AMERICAN SHIPS IN THE PORTS OF CHINA.

1. Whereas jurisdiction over citizens of the United States within the empire of China being by treaty reserved to the United States, by Act of Congress, approved 11th August, 1848, the statute laws and common law of the United States have been extended over said citizens in China, so far as they shall be found applicable in all civil and criminal cases (*See Sec. IVth of Act*); to avoid, as far as possible, the necessity of executing said laws in such cases, it is hereby specially enjoined upon masters and officers of vessels of the United States to use due vigilance to preserve the peace, and prevent difficulties between all seamen and subjects of China, while anchored at either of the five free ports.

2. Seamen are not allowed to land in the vicinity of the anchorage of the vessel to which they belong, or to visit the neighboring city, without permission of the captain or commanding officer, and then under charge of an officer of the vessel, and in no instance to be absent from the vessel over night: *Provided*, however, that the master may make exception in favor of those seamen in whose good character he can confide, and for whose correct conduct he is responsible. The master, or officer in command, will judiciously decide the number of sailors to be absent from the vessel at any one time.

3. Seamen absent from the ship, whether in the vicinity of the anchorage, or at the neighboring city, shall be on board within the time specified by the master or commanding officer;—should any fail of so doing, or be guilty of misconduct while thus absent, they shall be liable to punishment by fine or otherwise, at the discretion of the Consul, or consular agent.

4. Chinese boatmen having voluntarily consented to be registered at the Consul's, or consular agent's office, it is recommended to masters of vessels, in employing Chinese boats while in port, to give employment to such only as submit to such registration.

5. Chinese boats with fruit and small articles of trade, *spirited liquors* excepted, are permitted to approach ships, but only at such times during the day, as the master or commanding officer may deem proper.

6. Masters of vessels are required, on the one hand, to see that all just claims of subjects of China against seamen belonging to their ships are duly liquidated; and on the other to prevent, as far as possible, the Chinese from defrauding seamen.

7. Serious collisions occurring between citizens of the United States (whether seamen, or others belonging to an American vessel) and subjects of China, in which robbery or violence is committed by either party, or in which the death of a Chinese or foreigner ensues, the master or commanding officer of the vessel to which the latter belongs, shall, without delay, report the same to the United States' Commissioner to China, or to the Consul or consular agent of the port in which the crime is committed, in order to immediate judicial investigation and action.

The accommodation of docks for repairing ships has increased during the last four or five years, and the workmen are becoming more skillful. Messrs J. C. Couper & Co. have four docks, one of them built of stone, 550 feet long on keel blocks, with two caissons 70 feet wide and 17 feet depth of water, capable of receiving two vessels at once. Their wooden dock above Newtown is 220 feet long, and carries in 13 feet water; the two mud docks are respectively 180 and 150 feet on keel blocks, 48 and 35 feet wide at gates, and carry in 12½ and 10 feet water.

Messrs Thos. Hunt & Co. have three docks. The largest is 230 feet on the keel blocks, 46 feet wide at gates, and has 14½ feet depth of water; the smaller ones are respectively 160 and 145 feet long, 46 and 40 feet wide, and take in 14½ and 11 feet water. The two largest of these docks, and the large stone dock, are pumped out by stationary engines. Besides these seven principal docks, there are three smaller ones, making ten in all. The solid nature of the soil along the river banks, and the rise of the tide, afford many facilities for these purposes; and the business of repairing ships has attracted a considerable native population to Whampoa Reach. Vessels coming up to Whampoa to be docked or repaired, deposit their papers at their consulate, and are entered at the Customs; but pay no tonnage dues, if they have no goods, free or dutiable, on board.

The treatment of foreigners in the neighboring villages is not so rude now as it was twenty or thirty years ago, and rambles over the hills offer healthy recreation. Sailors dying at Whampoa are buried on Dane's I. at a charge of \$6; other foreigners are interred on French I., where the charge is \$12 for each grave. The Parsees have a separate cemetery on Dane's I.

There will be, it is to be hoped, more conveniences in time for the sick than can be found on board their own ships at Whampoa, though the facilities for sending sick seamen to the hospitals at Hongkong by steamers are so great, that at present the demand for accommodation there is not so urgent. Shops for the sale of sundries have been opened by the Chinese at Newtown and Bamboo-town on each side of the Reach, where sailors can be furnished with goods in great variety, and as cheap as at Canton.

The distance from Whampoa to Shameen is twelve miles, and masters use their own sampans or native boats, or go up in the steamers. In olden times, the river between the two places was alive with ships' boats passing to and fro, and frequently over a hundred seamen would be at Canton at once, idly roaming through the streets, and falling into the hands of dissolute natives, greatly to their own detriment and the annoyance of others. Their liability to sickness from exposure to the sun in a long pull to or fro on the river in midsummer, was also great, so that masters and men have both gained by the present change.

Sailors coming to Whampoa are exposed to the enticements of low Chinese, who hold out to them every temptation to drunkenness in Bamboo-town and Newtown, or by bringing liquor alongside. It is difficult to say which party is the most blameable, those who sell or those who buy, but the evils of the sale and use have come upon both, even at times to the loss of life in the disputes which have ensued. The sale of ardent spirits to foreign seamen is prohibited by the Chinese government, to its praise be it said; but as is the case with most other interdicts which interfere with the interests of the natives, no obedience is paid to the prohibition by either party, and the police are afraid of interfering with foreigners, and overlook all delinquencies. The shopmen who vend the samshoo (as the liquor is called,) try to screen their malpractices, and at the same time present additional temptation to the sailor, by the show of garments, pictures, shoes, and other articles which he is in the habit of buying. No sooner does a party of sailors land, than their emissaries hasten to entice them into their shops, where they ply them with the intoxicating draught, rendered more deleterious than the natives ever drink it, by the infusion of poisonous narcotics. If the deluded man takes the cup, he soon becomes noisy or violent, if not raving; or if no worse, is soon unable to manage himself; the shopmen then cheat him of his money, or plunder him of his apparel, and drive him into the street. Hence, in days past, have often arisen outrages, leading to interruption of the ship's trade, to heavy mulcts, and sometimes to wounds and homicide. One of the Regulations given above is intended to guard against these evils, by requiring that an officer shall accompany every ship's boat to look after the men; but there are hundreds of men in the ports of China over whom this restriction does not extend. It is well for the sailor to be cautioned by his captain that this liquor is sometimes made very sweet to disguise the oil of tobacco, vitriolic acid, cocculus indicus, or various essential oils, which are mixed in it; and that to drink it frequently induces delirium, fever, and even death in the hot season. Much of the mortality among seamen in the autumn and winter, while lying at Whampoa, is to be ascribed to their exposure and to drinking this villainous mixture; and it is probable, even with all their fondness for strong drinks, that if they knew what a deleterious compound it was, regard for their own health and lives would induce them to let it alone.

Too much care cannot be taken by masters to keep it away from the sailor, nor information too often given him of its properties, to deter him from touching it. And when, too, the Chinese see sailors lying in the gutter drunk, or hear them filling the streets with uproarious and profane cries, to the great disgrace of the names of foreigner and Christian, it becomes every one calling himself by these names to interfere

with authority if he can, or with persuasion, to cause the reproach to cease. The boarding-houses at Whampoa are few, as most of the unemployed seamen resort to Hongkong. The opening of the coast trade has given occupation to many seamen in native-owned vessels, who have thus become acquainted with the roughest class of natives; some of these craft are occasionally at Whampoa, and are looked upon with suspicion by the more honest of the native traders.

The city of Canton was for many years almost a synonym abroad for the whole Chinese empire, but this impression has lately given way to correcter ideas. Its foreign name is derived through the old Portuguese mode of spelling the name of the province Kwangtung, which the early traders wrote *Kantaō* and *Cantong*, and by some singular mistake took to be the designation for the city. Its proper native name is Kwang-chau fú 廣州府; it is also called Yáng-ching 羊城 the city of Rams; and *sang-ching* 省城 the provincial capital, for it is the official residence of the governor-general of the Two Kwang provinces, and of the governor, treasurer, literary chancellor, and judge of Kwangtung province. The prefect, or as he is sometimes wrongly called, the mayor, holds his office here, with the district magistrates of Pwanyu hien and Nanhai hien; altogether making it a resort for a large body of officials and their attendants. The city lies near the conjunction of three large streams which drain the largest part of the province, and through these tributaries—the East, North, and West rivers—produce can be brought to it from almost every town. Its commercial resources are consequently very great. The population has been usually reckoned at a million, including the immediate suburbs and the boat people, not one-half of whom live within the walls. It is by far the most compact, best built, and interesting city in China after Peking; and its inhabitants are among the most enterprising and wealthy in the empire.

Its trade had steadily increased from the time when it was first resorted to by European navigators in the sixteenth century up to the year 1850, at which date Shanghai began to exceed it; it has since begun to fall behind other ports, and native merchants fear it may even become reduced still lower in the scale. In 1842, when the provisions of the treaty of Nanking allowed foreign trade at four other ports in China, Canton was the greatest mart in Eastern Asia. Since 1851, the business connected with the emigration of Chinese to California and Australia, has gradually drawn away much of its native trade to the colony of Hongkong; it was more seriously interfered with by the insurrection in the province in 1854, and the destruction of Fuhshan with all its manufactories. Then came the disputes arising out of the *Lorcha Arrow* in 1856, and the burning of the Foreign Factories in December of that year, with the subsequent blockade of the river and capture of the city by the Allies in 1857; these misfortunes joined to the previous drawbacks completed the commercial decadence of the port. The opening of Hankau and other ports on the Yangtze has also diminished its relative importance, and will continue to interfere with its prosperity, but it has begun to revive since January 1860; and there is ground to conclude that its natural advantages, combined with the skill of its workmen and enterprise of its merchants, will still attract a large portion of the foreign trade.

Preliminary to a description of the details of trade at Canton, it will be proper to speak of the principal parties who are most connected with it among the Chinese. The customs' establishments at the open ports were placed under a high commissioner in 1858, who was to have the supervision of all their details. This officer was then Ho Kwei-tsing, the governor-general of the Two Kiang. He appointed a foreigner as his deputy, according to the arrangement agreed upon in Regulation X appended to the tariff, and the employment of foreign assistants in managing the collection of duties at Canton was commenced the next year. This change necessarily threw out of employment a great number of native clerks and tide-waiters, but the increase in the receipts has been so great as to reconcile the higher officers connected with the revenue to a system which they at first regarded with suspicion.

Among these higher officers, the *Hoppo*, or superintendent of customs, is the highest functionary connected with trade. His official designation is *Tuh li Yueh hsi-kwoh pü tájin* 督理粵海關部大人 i. e. Manager of the Maritime passes in Kwángtung; but through misunderstanding native titles in early times, he came to be known as the *hoppo*, which is a corruption of *hoi-po-sho*, the title of a petty officer who controls the police and boats on the river. It is possible, however, that when foreign ships anchored at Canton for trade three centuries ago, their crews were placed under the supervision of the *hoi-po-sho*, whose title gradually came to be thus transferred to his superior. The collector of customs has hitherto always been a Manchu, generally a member of the imperial household, and holding a special appointment from the Emperor to superintend the maritime commerce of Canton, and collect the duties arising therefrom; he paid his master a large bonus for the place, and was expected to enrich himself and his friends in three or four years. In consequence of this special appointment, he ranks as the fourth dignitary of the province, but he can assume no superiority over any but those of ordinary rank. His salary is nominally 25,000 taels a year, but formerly his chief emoluments were derived from fees, exactions, and percentage on the imperial duties, the chief portion of which are now abolished.

The head-clerk in his office, called *king-ching* 經承, is a Chinese, and has several writers called *shü-pan* 書班, under him for transacting the business of the department. In the palmy days of the co-hong monopoly, the *hoppo* was accompanied from Peking by an escort of two or three hundred of his Manchu compatriots, who were known as his *kiá-jin*, or domestics, and were distributed among the subordinate stations at Whampoa, the Bogue, Kiángmun, Casa Branca, Macao, &c., where they managed to live on the perquisites of their posts. At present few Manchus are attached to the Canton customs.

Connected with the *hoppo* in the general direction of trade, and his superior in all matters referring to foreigners, is the *tsungtuh*, or governor-general of the Two Kwang (known in the Canton lingo as the *John Tuk*); or in his absence, the *füyuen*, or governor of Kwangtung province. Before the promulgation of the treaties of Tientsin, his position as superintendent of foreign commerce in China gave this functionary great power, as he was the only authorized medium of communication between foreign ministers and the Court at Peking. At present he has nothing

to do with them, and his authority and correspondence, so far as relates to foreigners, are confined to the three ports of Canton, Kiungchau, and Swatau, lying in his jurisdiction.

The old monopoly of the co-hong, or privileged official merchants licensed by the Chinese authorities to trade with foreigners at Canton, which was brought to an end in 1842, has now almost passed out of mind among the merchants in China. Ample details of their institution and history up to recent days are contained in Auber, Staunton, and other writers. The hong-merchants could not in any case have survived long after their great support, the monopoly of the English East India Company, had ceased in 1834, without general bankruptcy; and when they one after another wound up their affairs, and their business passed into younger and more enterprising hands, there was no regret felt by any beyond their immediate retainers.

The other secondary department of the same close system, that of the linguists, or *tung-si* 通事, was not so restricted, and survived in its vigor until the customs passed into the direct management of foreigners. The linguists were so called because they were employed in all intercourse between the custom-house officers and foreign merchants; in former times they wrote petitions to, and announced edicts from government on behalf of foreigners. None of them were ever able to read or write a line of idiomatic English, or any language besides their own, and only a few of them could speak anything better than the jargon known as Canton-English. In the common routine of trade, where the matter was a simple detail of business, or in cases where their own interest was not likely to be involved in any way, there was no objection to trusting to their accuracy; but owing to their ignorance, and the poverty of the wretched oral jargon used, even with good intentions, they were liable to misunderstand and misrepresent the subjects they were to write upon. Still their position as custom-house clerks made them an indispensable adjunct of the trade, and their services were proportionably rewarded. Like the hong-merchants, they were obliged to pay for their licenses, and were liable to heavy exactions from the custom-house officers; the annual expenses of one of their establishments were reckoned at 10,000 taels. There were four or six of these establishments, each of which contained a full complement of clerks, who could attend to the custom-house business of a large number of ships. These have all been broken up by the changes recently introduced, and their members have mostly found employment in other branches of the general trade, with which their intimate acquaintance rendered them useful aids.

One other feature of the old system still remains to be noticed, if it can be said to have properly belonged to it, which is that of compradors, 買辦 *mái-pán*, so called from the Portuguese word used at Macao. Like the hong-merchants and linguists, a comprador could not formerly be employed by the foreign merchant unless he had a license from the government, and securities for his solvency. He acts as the steward and purser of the households of the merchants at Canton, or of his ships at Whampoa; to which used to be added that of general spy over all that was done by the inmates of the house, for whose good conduct he was held responsible. The post was a troublesome one, and at times somewhat dangerous, as when an angry governor-general like Yeh wreaked

that wrath upon the innocent comprador, which he had not the power to make fall directly on his employer. The compradores are usually connected with native mercantile and banking firms, which facilitates the management of large transactions. A *mai-pán* receives and pays out money, keeps an account of the daily expenses of the household, and hires all the servants, for whose general good behavior he is held responsible. This feature of responsibility which works pretty well on a small scale as in this case, and was the bond of union in the co-hong, runs through every part of the Chinese political and social systems, and strengthens the curious network of influences and checks, which have done much to mold and perpetuate the national character.

The comprador has in his employ a shroff, who examines all the specie received and paid out, and who, like the teller in a bank, is made responsible for the bad money he receives. In order to recognize coin once paid out, every shroff has a steel stamp, with which he strikes his name upon the face of the piece, nor will he receive a dollar back upon which he cannot find his own stamp, or *chop* as it is called; this precaution amounts to nothing, however, because he always refuses to acknowledge the stamp on a bad piece. The natives of Canton and Macao, and the interjacent places, are usually employed as house-servants, and for the most part perform their duties well, considering the imperfect jargon in which intercourse is carried on, and the consequent liability of the parties to misunderstand each other. Before they consider themselves qualified to act as servants, they receive what in their opinion is a tolerable English education, which consists in committing to memory a number of words and phrases from Chinese and English vocabularies written in the Chinese character, and with the English phrase constructed according to the Chinese idiom. There are always a few men to be found in Canton who get their living by thus teaching English to lads in the shops about the foreign houses and ships. Business, whatever be its amount or nature, is of necessity usually oral; for as the parties cannot understand each other's writing, they must depend on their own notes of the terms of contract, and this involves that carefulness of detail, without which no business can be well conducted. Important contracts, leases, &c., are sometimes put in writing by the Chinese to be kept by the other party. The jargon which is spoken at Canton and many other places in China, goes by the droll name of *pidgun English*, i. e. "business English;" it sounds strangely to a newly arrived foreigner, but its inverted construction is soon acquired, and it serves the purpose of carrying on the common details of business and household affairs. The only remedy for those who dislike it is to learn to speak Chinese better than the native speaks English, and this is now done to a far greater degree than in former years.

Foreign trade is conducted at Canton with great ease and regularity. The system of inland traffic through the eighteen provinces has acquired a high degree of uniformity in its details, and security is all that it requires to render it efficient. Goods brought down to the seacoasts should, according to this system, pay the same charges when leaving the country that they did when leaving their native province, for the transit duties are considered as merely defraying the charges of protection along the road. In former days, the port of Canton, engrossing all the European trade, attracted the attention of observers abroad by the ease at

security with which enormous cargoes were landed and shipped off, in comparison with any other Asiatic port. Much of this apparent facility was owing to the practical habits and method of the Chinese people, and partly to the exclusion of foreigners from the custom-house, where the linguists performed the necessary details of compounding or settling the duties as they could arrange. All the labor of landing and loading cargo, engaging coolies, packing and sorting goods, and other details connected with commerce, is performed by natives; the actual services of foreigners are chiefly confined to examining and exhibiting samples of goods, or seeing that they are honestly and properly packed.

CUSTOM-HOUSE REGULATIONS.

I. Masters must deposit their ship's papers and manifest with their consul, (if they have no consul, with the Customs,) within 48 hours after entering the port.

II. The import manifest must contain a true account of the nature of the cargo on board, and must be handed to the Customs, before any application to break bulk can be attended to.

III. The import manifest having been received, and ship's papers duly lodged with the consul or the Customs, permits to land goods will be granted, on the receipt of applications specifying the number of packages, with their marks, weight, quantity, and such like particulars.

IV. Before shipment of goods, permits to ship must in like manner be obtained.

V. Cargo for which a permit has been issued, but which cannot be received on board, must be brought to the custom-house jetty for examination, before being reloaded.

VI. When a vessel has received on board the whole of her outward cargo, the Customs must be furnished with an export manifest.

VII. After examination of goods, consignees or shippers will be supplied with a memorandum, for which early application should be made, of the duties payable. They may then pay in the amount to the Hai-kwan bank, or receiving office, when they will be furnished with a duty receipt in Chinese, which they must bring to the Customs. Import duties are due upon the landing of the goods, and export duties on their shipment. Amendment in respect of weights or values must be made within 24 hours after the landing or shipment of the goods.

VIII. On application being made for the Customs' clearance, if the Customs are satisfied that the import and export manifests are correct, and that all dues and duties have been paid, the clearance will be issued.

IX. In all cases of transhipment, application must be made for a tranship-permit; goods transhipped before receipt of such permit, are liable to confiscation.

X. Cargo boats conveying goods from Canton to Whampoa for shipment there, must be taken for examination to the Customs' jetty, before the goods can be put on board the ship. On arrival at Whampoa, their permits must be exhibited at the floating custom-house, for countersignature; in like manner, the permits of cargo boats conveying goods to Canton from ships at Whampoa, must be countersigned at the Whampoa floating custom-house, and on arrival at Canton, they must repair to the Customs' jetty, for examination.

On the arrival of a ship at Whampoa, the captain proceeds to Canton, and deposits her register with the consul of his nation, who gives him, or sends to the consignee a report for the hoppo. On receipt of the manifest, a Customs' permit is issued for the cargo as described in it, which gives the captain authority to open his hatches, and place the goods in cargo or chop-boats.

These lighters, called *sai-kwa-pien*, are strongly built, roomy boats, carrying one large mat sail, with one or two partitions, and a caboose astern for the accommodation of the crew, who live aboard. Goods are generally speaking carried safely in them, as they can be entirely screened from the weather, and placed under lock and key. It is advisable, however, to see that goods are well secured when they leave the ship, especially packages like bales of raw cotton, bundles of rattan or scrap

iron, or bags of pepper, from which it is easy to pilfer. The long practice of the boat-people in landing cargo has made them expert in levying a percentage of this kind of black mail on bulk, which needs to be looked after. The boats usually carry about 300 piculs, but custom has sanctioned some differences among the common articles of trade, as shown in the following list :—

IMPORTS.		EXPORTS.	
Raw Cotton, Bombay, Bengal, or Madras, }	100 bales.	Tea,	300 chests
Cotton Yarn, }	80 bales of	Raw Silk and Silk Piece-goods, }	100 piculs.
Shirtings and other Cotton goods, }	400 lbs.	Nankeens, brown & blue, }	20,000 pieces.
Bombazetta, Camlets, Lastings, Long Ella, }	4,000 pieces of 40 yds.	Alum, Cassia lignea, Buds, and Oil, China and Galangal Root, Bamboo and Rattanware, Camphor, Chinaware, Copper ware, Fireworks, Hartall, Paper, Lacquered ware, Rhubarb, Star Aniseed and Aniseed Oil, Tobacco, Vermilion, }	300 piculs.
Spanish Stripes and other broadcloths, }	1,400 pieces.	Other articles in proportion.	
Iron, Lead, Spelter, Steel, Copper, Tin Plates, and all other metals, . . . }	840 "		
Agar-agar, Bicho-de-mar, Betel-nut, Cochineal, Ebony, Cloves, Flints, Fishmaws, Gambier, Gums, Hides, Pepper, Patchuck, Rattans, Salt-petre, Sandalwood, Sapan and Red wood, Smalts, Window and Broken Glass, . . . }	300 piculs.		
Rice,	300 "		
Other articles in proportion.	600 "		

Shippers, on obtaining their orders for delivery of their goods countersigned by the consignee, make out from them the list of packages to be landed in one chop-boat. On receiving the orders on the ship and making out the list of goods to be landed, the importer applies at the custom-house for cargo-boat notes for as many chop-boats as he wants; these are hired by him, but are under the inspection of the Customs; and one or two of their clerks go in them to Whampoa. On the second day after the permit or boat-note was received, the lighter is alongside of the ship to receive her cargo; when loaded, it is taken to the floating custom-house office, and its hatches sealed up previous to returning to Canton. After all the formalities of delivery at Whampoa are attended to, and the chop-boat reaches Canton, the importer gives in a memorandum of her lading to the office, and applies for an order from the Customs to the Bank directing its clerks to receive the amount of duties stated therein, and to issue a receipt for the same.

The cargo in the chop-boat is then examined, and a certificate is granted of the amount of duty to be paid on it, and stating in Chinese the particulars of the cargo. The form of these blanks is here given; similar forms are issued at all the ports.

CUSTOM-HOUSE CERTIFICATE OF DUTIES TO BE PAID.

單 驗 關 海 粵

同治年 月 日 給單	號收可也此照	交納足色銀兩 取	共計 憑單持赴銀號	口稅銀	計開	口貨物	商船名	今據經報	國商人 號
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This paper is sent to the Bank by the importer, who receives on paying its amount, a receipt in the following form:—

BANK RECEIPT OF PAYMENT OF DUTIES.

收 號 口 關 海 粵

粵海關銀號給單	同治年 月 日	此照	關憲呈請驗收可也	號收以憑該商持赴	所載銀數兌收合給	本號按照海關驗單	應完稅銀	號商人 名	今收到 報 國
---------	---------------	----	----------	----------	----------	----------	------	----------	---------------

With this receipt for the payment of duties, the importer applies again to the custom-house, and exchanges it for a duty-paid order, which releases his goods from the Customs. This release-permit is given in Chinese and English, and cargo landed or stored before it is issued, is liable to seizure and confiscation.

DUTY PAID ORDER.

The undermentioned
goods having paid duty,
Tael
may be released.
Vessel,
... .. Consignee.

單 行 放	
同 治 年 月 日 給	商 人 報 驗 船 裝 清 運 口 貨 物 業 已 完 稅 餉 憑 照 放 行 計 開

The formalities to be observed in shipping off cargo are the same as for landing it. When the chop-boat has been loaded, it is taken to the jetty near the custom-house at Canton for examination. When the export duty has been paid, and the receipt obtained from the Bank, a permit to ship is issued, by merely filling in a blank just like the preceding, which serves for either imports or exports. A native tidewaiter accompanies the lighter to Whampoa, where the permit is examined and countersigned at the floating custom-house office, before the goods can be put on board.

Tonnage dues are paid to the Bank by means of a blank form like the one first given, which is obtained on application at the Customs. In olden times, the regular charges on every ship going to Whampoa amounted to \$2573 (including the pilotage), besides the measurement duty, which depended on her size, and varied from \$650 to \$3000; if laden with rice only, she paid about \$1000 altogether. These exorbitant demands were levied directly on the ship, partly because the duties could not be regularly obtained by the government, and partly to find means to support two or three charitable institutions in the city, which had been thrown on the co-hong for a maintenance. The total regular charges on a ship and her cargo at that period of the trade of China were much larger than they are at present; and the irregular exactions levied from time to time on foreign trade by needy or unscrupulous officials *squeezing* the hong-merchants, ostensibly for the imperial service, were large and detrimental to all engaged in it. The bonus on rice-laden

ships led to the transshipment of merchandise into large vessels entering port from the anchorages at Lintin and Cumsing-moon, and taking in rice from stationary store-ships there, and going to Whampoa as rice ships. The present condition of the trade is more favorable, the duties and charges less than in those days, and the imperial revenue better managed. The charitable institutions which used to depend on the trade of Canton have been mostly closed up during the troubles which have succeeded the monopoly days.

When the vessel is ready for sea, the captain hands in her export manifest. If this and the import manifest agree with those entered in the custom-house books, and all the duties have been paid and bank receipts returned by the consignees or shippers, the port-clearance of the vessel is issued. The blanks for manifests at this port are somewhat in the following forms :—

IMPORT MANIFEST.

CANTON _____ 186

A true Manifest of the Cargo of the _____ Vessel _____
 _____ Tons Register _____ Master, from _____

MARKS AND NUMBERS.	NUMBER AND DESCRIPTION OF PACKAGES.			CONTENTS.	SHIPPER.
	<i>Bales.</i>	<i>Cases.</i>	<i>Packages.</i>		

EXPORT MANIFEST.

CANTON _____ 186

A true Manifest of the Cargo of the _____ Vessel _____
 _____ Tons register _____ Master now bound to _____

MARKS AND NUMBERS.	NUMBER AND DESCRIPTION OF PACKAGES.				CONTENTS.	SHIPPER.
	<i>Chests.</i>	<i>Hf-ch.</i>	<i>Boxes.</i>	<i>Phys.</i>		

The port-clearance of earlier days was a formidable-looking document of yellow paper, and ornamented with curling dragons. Its large vermilion seals obtained for it the name of a *hung p'ai* 紅牌 or red permit,

anglice, "grand chop," because everything with a government stamp, seal, or sign, was indiscriminately called a *chop* by foreigners, and this was the grandest one they looked for in the course of trade. It was received in foreign countries as a valid certificate of legal departure from Canton, though it does not exactly correspond to what we mean by a port-clearance, as the translation shows:—

"— by imperial appointment, superintendent of customs at the port of Canton, &c., &c., grants this in obedience to an imperial order to the effect following:— 'European ships having paid the dues of tonnage, &c., if by contrary winds or water they should be driven to any other province, not with design of remaining there to trade, shall, provided it be found that they possess a certificate, properly sealed, of their having paid such tonnage dues, be immediately permitted to depart, without any further exaction of charges. This decision is on record.'

"Now the foreign ship's merchant, having taken on board cargo, is about to sail to ——— to trade; the tonnage dues, &c., have all been paid according to law; and this document is therefore given into the hands of the said ship's merchant, for the examination of those whom it may concern. Should the ship reach any pass, barrier, or other place where examination is used to be made, on presenting this, she must be allowed to proceed, without paying further charges or duties, or suffering any distress, stoppage, or hindrance."

"The arms carried for the defence of the ship, according to old regulations, have been ascertained, and a list made, as hereinafter inserted. No more are permitted to be carried, nor may any contraband articles be taken on board; a violation hereof will bring on the parties an inquiry which they will find inexpedient.—A necessary document."

(Here followed a list of *seamen, arms, &c.*)

The above provides for the free admittance into any port of vessels driven thither by stress of weather. The following is the law with respect to shipwrecked foreigners, given in the form of an imperial edict, dated the second year of Kienlung, A. D. 1737:—

"Along the whole extent of our coast, it continually happens that foreign ships and people are driven on shore by gales of wind. It is hereby ordered, that the governors-generals and governors of provinces take the lead, and cause officers to be particularly attentive in affording compassion; that they employ the public money to bestow food and raiment on the sufferers, and to refit their ships: after which, that they cause their goods to be returned, and see that they are sent home to their own country. This is done to manifest the extremely tender feelings of my imperial mind toward men from remote regions. Take this order, and command it to be an everlasting law. Respect this."

It is observable that this humane law provides relief for all distressed men, and hardly a year passes in which Japanese, Corean, Lewchewan, or Annamitic, boats or junks are not wrecked on the coast of China; their crews are always taken care of at the public expense by the nearest officer to where they land, and maintained and forwarded to a port where they can reach home. The crews of European ships have also been received and forwarded to the nearest port, when they have been cast on the shores of China. There is a great difference, however, in the treatment shipwrecked mariners receive from the inhabitants along different parts of this coast. From Hainan to Amoy, the people have a bad reputation, and are likely to plunder the wreck and crew as soon as they can reach them, but life is not often taken. From Fuchau to Shanghai, the people are more civil to the distressed; but the good intentions of this rescript of the emperor Kienlung are not very often carried out by his subjects.

The present port-clearance is confined to the second clause of the above form; the Chinese portion is here quoted, and is the only one now granted to ships:—

CANTON PORT CLEARANCE.

牌 船 關 海 粵

大清欽命督理粵海關部 爲

給發船牌事現據商船裝載貨物前
往貿易已經照例完納稅餉合行給
牌爲憑爲此牌給該船商收執如遇
津隘卡沿海處所立即放行毋得留難
阻滯須牌

同治 年 月 日

右牌給商船 收執

In former days, difficulty was sometimes experienced in getting the grand chop, from the hong-merchant's inability or dilatoriness in settling the ship's accounts; or it was kept back by the custom-house officers for the purpose of extorting money from him. The present arrangement has removed all unnecessary detention in this particular; and the details of the trade as now remodeled, and particularly all that relates to paying the duties, has been of great advantage to the Chinese government. Previous to the present system coming into operation, it was the usage at Canton for the duties of all kinds to be paid when the ship was loaded and ready for sea, the linguists managing its business and making out the accounts. That plan was certainly less encumbered with petty details which the foreigner has now to attend to, but the imperial revenue suffered in proportion, and no one ought to complain of measures taken for its protection.

Ships plying on the coast pay their tonnage dues thrice a year, according to Art. XXIX of the British treaty, and a special certificate is granted to any vessel whose consignee or captain applies for it when his regular tonnage-dues are paid. The Canton certificate is issued in both the English and Chinese languages.

COASTWISE TONNAGE CERTIFICATE.

免 鈔 專 照

大清欽命督理粵海關部 爲

給發執照事按通商章程內載凡船隻出口欲往通商他口並香港地方該船主稟明海關發給專照自是日起以四個月爲期如係前赴通商各口俱無庸另納船鈔以免重征等因茲據人納船報鈔有免船載噸數在本國商已完過船鈔爲此照給商人在本國商免其重納船鈔須至專照者商人在本國商

右給商人

收執

同治 年 月 日

粵海關部 限月日繳

TONNAGE DUES.—*Special Certificate.*

The _____ Vessel "_____ " of _____
tens burden, has paid Tonnage Dues at this port, clearing for _____

The term for which this Certificate is issued expires on
the _____ 186

Office of Maritime Customs, Canton, 186

This document is vitiated if the vessel goes to a foreign port, as Manila, Bangkok, &c., even though she return within the specified time. When the captain enters his vessel at the port after leaving Canton, he hands this certificate with the manifest to the Customs, where it is then noted on their books that it is in existence.

The port-clearance having been obtained, the captain presents himself at the Consulate; and when all the fees or fines due from the ship are paid, his outward manifest signed and sealed by the consul, and his ship's papers returned, he can leave the port after showing his register to the Customs at Whampoa. The pilot is obtained by merely sending for him at Whampoa, and telling him when to go aboard ship.

TABLE OF BRITISH CONSULAR FEES, ISSUED MAY 1, 1855.

PART I.—Fees to be taken in respect of matters in which the Consul's interposition is required by Law.

For every declaration made before the Consul, in forms B, C, F, G, H, and L, in the schedule to the Merchant Shipping Act, 1854, with a view to the registry, transfer, and transmission of ships, interests in ships, or mortgages on ships	£	s	d
	0	5	0
For indorsing a memorandum of change of master upon the certificate of registry	0	2	0
For granting a provisional certificate of registry (this fee to be exclusive of fees on declarations)	0	10	0
For recording a mortgage of a ship, or shares in a ship, made under a certificate of mortgage	0	10	0
For recording the transfer of a mortgage of a ship, or shares in a ship, made under a certificate of mortgage	0	7	0
For recording the discharge of a mortgage of a ship, or shares in a ship, made under a certificate of mortgage	0	7	6
For every sale of a ship, or shares in a ship, made before the Consul under a certificate of sale	0	10	0
For inspection of the register book of transactions in ship	0	1	0
For every seaman engaged before the Consul	0	2	0
For every attestation in agreements with seamen made before the Consul	0	2	0
For every seaman discharged or left behind with the Consul's sanction	0	2	0
For ever desertion certified by the Consul	0	2	0
For attesting a seaman's will	0	2	0
For examination of provisions or water, to be paid by the party who proves to be in default	0	10	0
For every salvage bond made in pursuance of 17 and 18 Victoria, chapter 104, section 488, to be paid by the master or owner of the property salvaged	2	0	0
On disbursements in respect of distressed seamen, a commission of 2½ per cent.			

PART II.—Fees to be taken in respect of matters in which the Consul's interposition is to be given only when required by the parties interested.

For noting a protest, with certified copy if required	0	5	0
For order of survey, with certified copy if required	0	5	0
For extending a protest or survey, with certified copy if required	1	0	0
And, if it exceeds 200 words, for every additional 100 words	0	2	6
For preparing and attesting bottomry or arbitration bond	1	0	0
For attesting bottomry or arbitration bond not prepared by Consul	0	5	0
For attendance, out of consular office, at a shipwreck, or for the purpose of assisting a ship in distress, or of saving wrecked goods or property, over and above travelling expenses, per diem	1	1	0
For attending valuation of goods, if under £200 in value	0	10	6
For attending valuation of goods, if £200 and upwards in value, for every day's attendance during which the valuation continues	1	1	0

	£	s	d
For attending sale of goods if the purchase money is under £200	1	1	0
For attending sale of goods if the purchase money is £200 or upwards, <i>per</i>			
every day during which the sale continues	8	2	0
Certificate of despatch of goods exported from the United Kingdom	0	2	0
Bill of health	0	10	0
Visa of passport	0	2	0
Opening the will of a British subject, not being a seaman	1	1	0
Management of property of a British subject, not being a seaman, dying intestate, a commission of	2½		per cent.
Registration of documents, or other matters	0	2	6
And, if exceeding 100 words, for every additional 100 words	0	0	6
For every certified copy of a document not before mentioned	0	2	6
And, if it exceeds 100 words, for every additional 100 words	0	0	6
For administering an oath or declaration, including attestation of signature if required	0	2	0
For attesting a signature	0	2	0
For annexing the seal of office and signature to any document not mentioned in, or otherwise provided for by this table	0	5	0

Note 1.—No fee is to be taken for the custody of, or indorsement on, ship's articles and papers deposited with the Consul in pursuance of the Merchant Shipping Act, 1854, section 173.

Note 2.—Where any fee is fixed by the foregoing tables for any particular act or transaction, no additional fee is to be demanded for signature, attestation, or annexing seal of office.

Note 3.—The above fees, if not paid in English money, are to be calculated at the current rate of exchange.

TABLE OF AMERICAN CONSULAR FEES, ISSUED NOVEMBER 20, 1855.

The following table, selected from the full tariff of fees issued by the Department of State, contains the most common items for which the interposition of a consul is required. It does not include, however, the table of fees paid in the American Consular Courts for services rendered by the marshal, clerk or witnesses in cases of judicial process.

For receiving and delivering ship's papers, each ton measurement, paid quarterly	\$0.004
For discharging or shipping seamen at the Consulate, under ten for one ship, each man	0.50
For every certificate, except passports, and for placing seals on the property of deceased Americans	2.00
For settling and paying over the proceeds of intestate or other estates, a commission of	5 per cent.
For delivering over property not in money from such estates before final settlement, commission of	2½ per cent.
For administering an oath or affirmation on matters relating to a vessel	0.50
For administering an oath, as a notary	0.25
For noting a protest	1.00
For extending a protest, { under 200 words	2.00
{ for every additional 100 words	1.00
For recording a document, { under 100 words	0.10
{ for every additional 100 words	0.50
For issuing an order for a survey	1.00
For issuing an order for the arrest or release of a seaman	1.00
For making copies of documents, per hundred words	0.20
For drawing a power of attorney	5.00
For preparing a bottomry or arbitration bond	5.00
For attendance at a shipwreck, or for assisting a ship in distress, or of saving property, (over and above traveling expenses) per day	4.00
For attending an appraisement, where the goods are under \$1000 value	3.00
For attending valuation of goods, where they are over \$1000, per day	5.00
For attending sale of goods, { purchase money under \$1000	5.00
{ purchase money over \$1000, per day	5.00
For preparing a bill of health	2.00

COAST TRADE DUTY EXEMPTION CERTIFICATE.

粵海關半稅收稅單

同治	右照給	大清欽命督理粵海關部為
年	月	日
限到口日呈繳	號商船收執	
計開	給發收單事今據國商人稟報前	
商持赴	由進口運來中國土產貨物已經照完	
合行發給	復進口半稅今仍不合鎖售現將原貨	
裝載	給國第	
給	海關已完復進口半稅單	
口呈驗須至收單者		

The whole business of foreigners conveying produce through the interior of China under these regulations is still so new to the people, that it is only near Shanghai, and along the Yangtze' kiáng and Pei-ho, that it has yet been even attempted, and the results hitherto are not encouraging. At Canton, nothing has been tried, and the disturbed state of the adjacent districts and the province at large furnish a reasonable excuse for suspending the attempt. This part of the trade with China must necessarily be left for the most part to natives, who better understand the risk, and can avoid the impositions or charges of local officers, which foreigners cannot easily arrange.

The position of Canton near the two foreign colonies and free ports of Hongkong and Macao, much increases the difficulty of carrying out all the new fiscal regulations established for the protection of its revenue; but when security is understood and known to be the return made to the lawful trader by his rulers for the duties he pays them on his traffic, and piracy and smuggling are restricted at the same time, a part at least of the objects intended by its establishment will begin to be reached.

Among these difficulties, the proper management of the river steamers plying between the city and those two ports was a troublesome point, so as not to interfere with their usefulness by undue detention. They were especially allowed by the Governor-general in 1859 to pass in and out of the Bogue on the payment of tonnage-dues semiannually, by a particular arrangement under Art. XXXI. of the British treaty, and this removed one cause of dissatisfaction. Previous to this, it had been claimed that they came under the privileged class of mere passenger vessels, and great liberties had been winked at. Soon after the tonnage-dues had been regulated, the mode of lading and discharging cargo was arranged, by the following

REGULATIONS FOR RIVER STEAMERS.

I. On entering port, masters of river steamers must have their import manifests in readiness to hand to the Customs' officer, who will board the vessel on arrival. For cargo to be discharged at Whampoa, a separate manifest will be required, to be handed to the customs' officer at that place. The Customs must, in all cases, be furnished with import manifest before any cargo can be discharged.

II. Consignees are not required to make application to the Customs for permission to remove consignments from the steamers, but all goods imported in such vessels must on being discharged be taken for examination to the Customs' jetty.

III. All exports for shipment by river steamers must be sent to the Customs' jetty for examination, on which a permit to ship will be granted.

IV. Manifest of cargoes exported must be handed to the Customs on the return trip of the steamers.

V. River steamers must not land or ship cargo at any other places in the river, than Canton and Whampoa. Any breach of these regulations respecting the shipment or discharge of goods exposes such goods to seizure and confiscation.

VI. The custom-house is open for the transaction of business from 10 A.M. to 4 P.M., and the river steamer office from sunrise to sunset, Sundays and holidays excepted.

In carrying out Rule II. in the above, the consignees of goods are furnished with blanks, which they fill up, making themselves responsible for the duties, and hand it to the Customs when the cargo boats go to the jetty for examination.

RIVER STEAMER IMPORTS.

To the Commissioner of Customs,

CANTON, _____ 186

Please examine and pass the undermentioned Goods imported to our consignment by Steamer " _____ " of _____

Duty payable by us.

<i>Denomination of Goods, with Marks and Numbers.</i>	<i>No. of Pkges.</i>	<i>No. of Pieces.</i>	<i>Weight.</i>	<i>Value.</i>	<i>Remarks or other Particulars.</i>

Delivered }

Duty

Taxes _____ m. _____ c. _____ c.

When this memorandum has been received, and examination has verified its accuracy, the goods in the boat are released and landed. The next day, the proper statement of duties claimed on them is sent to the consignee from the Customs, and the duty collected. If an attempt is made to land them direct from the steamer, they are liable to confiscation, under the 39th article of the British treaty. These memorandums, signed by the consignee, are regarded as promissory notes binding for their amount. Native passengers and others, landing small lots of cargo at the jetty inspection-office, pay the duty charged upon them before they remove their goods. If the above form is not handed in by the foreign merchant, his goods are detained until all charges are liquidated, the same as if they came from ships at Whampoa.

In order further to expedite the business in the steamers, a special office is opened for the examination of cargo exported or imported by them. The facilities furnished in this way for bringing produce in and out from the shipping and warehouses at Hongkong is shown in the amount of the tonnage entered at Canton in 1861; it was 200,668 tons in steamers, and 143,370 tons in sailing vessels; this disparity may be less during coming years, if peace continues in the province at large, and the transit of produce is not interfered with.

Duties are paid to the government, both by foreigners and natives, in *sycee* silver. The merchant sends his comprador to the government bank with the silver, which he has purchased in the market for the purpose. If foreign coins are sent in, Art. 33 of the British treaty provides that they shall be received according to an assay made at Canton in 1844, under the supervision of proper officers to determine their value.

PROCESS OF THE ASSAY.	Assay of 20 New Rupees.	Assay of 5 New Peruvian Dollars.	Assay of 5 New Mexican Dollars.	Assay of 5 New Bolivian Dollars.	Assay of 5 New Chilian Dollars.	Assay of 5 Dollars out money.
Weighted before melting.	t. m. c. c.	t. m. c. c.	t. m. c. c.	t. m. c. c.	t. m. c. c.	t. m. c. c.
Weighted after melting, remelting, and cast into a shoe of pure <i>sycee</i> , ...	0 2 0 3	3 6 0 0	3 6 7 5	3 6 0 0	3 5 5 5	3 6 0 0
Loss of weight, ..	0 5 5 3	0 2 7 0	0 3 8 0	0 3 9 0	0 4 0 0	0 4 2 0
Value of 100 taels' weight of each coin,	Rupees.	Peruvian	Mexican.	Bolivian.	Chilian.	Out money
Difference between 100 taels' weight of coin and of pure <i>sycee</i> ,	91 0 5 5	80 7 2 2½	80 3 7 1	80 1 6 7	80 8 7 0	80 3 3 4
Amount of coin to be paid to equal 100 taels of pure <i>sycee</i> ,	89 1 5	102 7 7	106 2 9	108 2 3	111 1 3 0	116 6 6
	100 7 9 0	111 4 5 5	111 9 0 0	112 1 5 0	112 5 2 0	112 2 0 7

At an assay made at Shanghai in 1855, the results were, for the last line, somewhat different; viz., Amount of coin to be paid to equal 100 taels *sycee*:—*Mexican dollars*, Ts. 112.1.1.0; *Peruvian*, Ts. 111.9.5.7; *Bolivian*, Ts. 111.2.5.5; *Carolus*, Ts. 110.6.2.2; *French 5 francs*, Ts. 113.1.5.0; *Rupees*, Ts. 110.7.2.0. Neither of these assays are such as would be passed by the mint masters in Europe, but the object in view at the time was rather to decide on some standard of payment at the custom-house, and by the adoption of this table of values no dispute has since arisen.

The charges for melting, remelting, &c., formerly estimated at 1 *tael*. 2 *m.* for every 100 *taels*, were abolished by Rule IX. of the Commercial Rules; but there is a small percentage demanded for the difference of scales at the custom-house and those used by the shroff, which ranges between 3*m.* 3*c.* 5*c.* and 3*m.* 4*c.* per 100 *taels*. In estimating the actual duty to be paid on goods, therefore, the rate of *sycee* at the time must be known; and then other charges can be calculated. In paying 1000 *taels'* duty, for instance, the amount in dollars would be thus estimated:

Duty to be paid,	Tael, 1,000.0.0.0
Difference of scales,	" 3.4.0.0
	<hr/>
	1,003.4.0.0
Premium on <i>sycee</i> 10 per cent,	" 100.3.4.0
	<hr/>
	Tael, 1,103.7.4.0
Amount at 717 <i>taels</i> per \$1000, is	<u>\$1,539.38</u>

The influences which affect the price of *sycee* in the markets in China are not fully understood, but the fluctuations seem to be owing chiefly to the speculations of the private bankers and assayists, who control the market, or have the power to put the rate up or down as suits them. It does not appear that the abolition of the meltage fee has influenced the price of *sycee*, or been practically of the least benefit to foreigners in the payment of duties; for as long as they can buy it under 10 or 11 per cent. premium, it is a more advantageous medium than dollars. The rate of premium for it is two per cent. and upward higher at Canton since the meltage fee was abolished; fluctuating in 1861 from 8.1 per cent. in January, to 9.5 per cent. premium in November. In 1856, the average was 7 per cent.; and in 1834, about 3 per cent. less. The greater sums paid into the custom-house during the year 1861 over the preceding would partly account for the rise.

The qualities of *sycee* silver chiefly current and most known in this market are four. Gold is never received by the Chinese government in payment for any dues, nor can it be said in any degree to enter into the currency of the empire.

1st. The 潘庫錠 *Fán-kú ting*, or bars of silver from the Pú-ching or treasury.

2d. The 元寶錠 *Yuen-páu ting*, or large shoe-shaped ingots of *sycee*. (These two kinds are received as pure silver.)

3d. The 關餉錠 *Kwán-hiáng ting*, or hoppo's *sycee*, which is commonly at a small discount, varying from 1 mace to 5 mace per 100 *taels*, or $\frac{1}{10}$ to $\frac{1}{2}$ per cent. on pure silver.

4th. The 鹽餉錠 *Yen-hiáng ting*, or salt commissioner's *sycee*, which is commonly at a small discount, varying from 5 mace to 1 *tael* per 100 *taels*, or $\frac{1}{2}$ to 1 per cent. on pure silver. Other kinds and qualities are met with in small parcels, but the above four kinds are the principal.

The name of the government bank where the duties are taken is Hangmau, 恒茂 and Hopshing 合盛. The shop Kwonghang, 廣恒, at which the above assay was made, is within the city.

Since the difficulties which occurred with the English at Canton in 1856, and resulted in the destruction of the old Thirteen Factories and the extensive hong or warehouses near them, there has been less merchandise stored there than previously. The character and honesty of the natives in whose hands large amounts of goods owned by foreigners were left, when the English forces retired from the city in January, 1857, was shown by the returns of sales made from time to time during the ensuing months; and though there were some exceptions, the general trustworthiness of these agents at a time when hundreds of natives lost their lives from connection with foreigners, was highly creditable, and deserves to be recorded.

Goods are occasionally landed at Canton before they are sold to the dealers, but the facilities for sending up such as are needed from Hong-kong diminishes the amount in comparison with former years. The best sort of native warehouses are merely a succession of substantial brick tiled roofs supported on brick pillars, and lighted by narrow openings. The ground is *chunamed*, or made with a hard finish of sifted sand, mixed with fresh lime and wood oil, beaten smooth. Goods of delicate nature are liable to mold in them, but merchandize generally is kept securely. The old hong were the same sort of buildings. Goods are stored, packed, and shipped off from the hong, while the *chán-fong*, or packhouses, are used for manufactories or workshops, where workmen prepare the tea, silk, or other articles for market. Owing to the great risk in Canton from fire, the high rates of insurance, and the difficulty of saving property in times of danger, foreigners have avoided holding many of their own goods there; but when the settlement on Shameen is prepared, and houses are erected for the mercantile firms, this will probably not be so much the case.

In loading teas, the captain of the ship should keep a good oversight upon the native stevedores, lest they place the dunnage carelessly, de-face or mar the chests, or get the ship out of trim; though their skill and care are not small, and they will stow a cargo as well as in most parts of the world. The ballast should be of small stones (always obtainable at Whampoa), and covered with boards so as not to touch the teas, while boards or split bamboos should be placed between the chests and the ship's side. If the boards on which the chests are slid into the hold are too greasy, or the coolies use the maul to drive them into their places without a board to ward off the stroke, or walk over them, the chests are liable to be marred and rendered less saleable. Sometimes the cargo can be taken in so as to put the heaviest teas, as Gunpowder, Imperial, or Hyson at the bottom, and Flowery Pekoe or Oolong at the top. It is well for the cargo to be ventilated all it can be while being taken in, lest some of the chests sweat. The sample chests, marked "*muster*," should be laid aside until the cargo is all in, and then stowed where they can be reached as soon as the ship arrives in her destined port. Silk goods in American ships generally pay a freight nearly double to that on teas, and are stowed in a sort of trunk formed by the coarser cargo in the hold near the main hatchway, in order to protect them from leakage, and save them from injury as long as possible, in case the ship is stranded or springs a leak. Raw silk is also stored more carefully than less valuable cargo. Anise or cassia oil and cam-

phor are always carried on deck in tea ships, secured as safely as possible; matting, rattan-ware and fire-crackers are stowed upon teas; cassia in mats is stowed in with the chests to fill up the corners.

In taking in cargo, the receiving officer should not be interrupted, for he has need of all his carefulness to see that the coolies in the chop-boat do not sliily pass up a chest with two tallies stuck in it, or slip a package off sideways from the board after it has been reckoned. He should also see that the cases have not been broken open on the way down from Canton, and patched up again.

Transshipping goods at Whampoa was formerly done stealthily, or attended with great expense; for whatever merchandize was thus transferred was charged with the same duties as if it had been brought to Canton, the Chinese government looking upon the transaction in the light of a sale by one ship to the other; such a rule brought about its own violation, and was easily evaded by feeing the Whampoa tide-waiters.

The rules, forms, and details here given for the business of a ship at Canton include many which are also applicable to other open ports in China; and in truth the comparative honesty and activity of the native merchants of Canton have been felt in the management and modeling of the foreign commerce at all those places. They have gone there with the foreign merchants as interpreters and pursers, have aided in conducting business, and settled themselves there as members of the community. The aptness of the workmen at Canton in making articles for foreign use and demand, has not been hitherto equaled elsewhere in China, and their skill will always gives the port a superiority for certain articles. The shops at Hongkong are supplied from Canton, while large amounts are shipped to other ports too, for sale to foreigners, so that the peculiar fabrics of the place have nearly as great a sale as before. The country accessible through the rivers which debouch near Canton includes an area of more than a hundred thousand square miles, reaching far into Yunnan province along the south of the Nan-ling. As it is opened up to commerce, the importance and trade of the city as the mart of southern China will gradually increase. Steamers will become better known, and then be employed on the West River as far as Wú-chau in Kwangsi, on the East River beyond Hwui-chau fú, and likewise on the North River to Sháu-chau fu, thereby bringing the inhabitants of the valley of the Pearl river and its great branches into better acquaintance with each other.

Section 2.

PORT OF CHAUCHAU OR SWATAU.

THE city of *Chauchau* 潮州 is the capital of a large and populous department, which forms the southeast part of Kwangtung province; it is divided into nine districts, two of them, *Háiyáng* 海陽 and *Fung-shun* 豐順, unite to make the prefect city of *Cháuchau*, or *Tié-chíuás* it is called on the spot. This town was inserted in the treaties of 1858 among the ports open to foreign commerce, although no foreign vessels had yet gone up to it, in the expectation that the inhabitants would gradually participate in the trade at the mouth of the river. Such has, however, not yet been the case; on the contrary, they have shown a decided repugnance to foreigners residing, or even entering the gates of the city, and the trade is still carried on at Swatau. The channel leading up to *Cháu-chau* is very shallow, owing to the waters of the River *Hán* losing themselves among several streams; and it is only at high tide that large vessels could reach the city; under favorable circumstances, therefore, the traffic with it would be carried on in lighters and small craft. The people of this part of Kwangtung province are enterprising, industrious, and turbulent, and have the reputation of rendering such sort of allegiance and such amount of revenue to the imperial authorities, as it may suit their interests and fear of the Emperor's power to grant. Myriads of them have emigrated to Siam, where they constitute the largest portion of the Chinese population, and add much to the prosperity of that kingdom by their industry and traffic; others go to Borneo, Singapore, Malacca, and contiguous regions, everywhere carrying habits of independence and self-government that make them troublesome to the weaker natives. The people living inland, north of *Cháuchau* prefecture in *Kiáying-chau*, are popularly known as Hakka people, a term which answers nearly to *squatters*; these have emigrated to the same regions through Swatau, and are known by their dialect, which differs very considerably from the people on the coast.

The present port of *Cháu-chau*, Swatau, (or with a nasal twang, Swatau, the local pronunciation of *Shántau* 汕頭) is a small village situated on a sandy spit three or four feet above high water mark, at the mouth of the river *Hán*; it lies in the district of *Ching-hai* 澄海 distant about two miles from the town of that name. Foreign vessels anchored in this region when the port of Amoy was opened in 1843; and even before that time opium vessels laid off Namoh I., a few miles north of Swatau. The natives then came down to Double I., or *孖嶼* *Ma-sü*, bringing their goods in native boats and transacting their business on board ship. Houses for the accommodation of all parties gradually arose on Double I., so that when the trade was legalized by the treaty, a settlement had already been formed. The custom-house and foreign consulates will ere long be removed to Swatau, and Double I.

will then remain as a subsidiary warehousing point. Swatau itself contains merely a trading population of about 2,000 inhabitants, who have been drawn together by the commerce, and have many feuds and rivalries among themselves. The chief items of export are tobacco, paper, coarse chinaware, and sugar; opium, raw cotton, and bean-cake, are among the leading articles of import. Tiles for flooring and roofing, potato flour, shoes, leather, cotton cloth, dried and salted fish and vegetables, rice and fruits, also appear in the list of articles. There are over 100,000 pieces of cotton goods taken annually, and more than 3,000 chests of opium. The estimated value of the total trade in 1860 was \$6,176,293; in 1861, it was \$6,873,984; in 1862, over \$8,500,000. Of each of these amounts, opium formed about two millions of dollars.

The region adjacent to Swatau is so populous that its trade may be expected to increase every year. The rates of pilotage up to Swatau from the outer anchorage near Double I. is \$2.50 per foot. During the last ten or twelve years, many ships have loaded with coolies at this anchorage for Peru, Cuba, and other countries; and some horrible acts of cruelty and kidnapping have taken place here in connection with this trade, the remembrance of which must remain in the minds of the people; their repugnance to further intercourse with foreigners may arise from something of this nature. Since the legalization of the trade, measures have been taken to prevent these atrocities, which were mostly committed by native agents, and it is to be hoped, without the cognizance of their employers.

Section 3.

PORT OF KIUNG-CHAU IN HAINAN.

THE island of Hainan 海南 has been inhabited and governed by the Chinese from very early times. Its foreign name is unknown to them in that restricted sense; it means Southern Sea, and has a wider application, including this large island and the regions further south. The whole island is included in the prefecture of Kiung-chau or King-chau-fú 瓊州府, by which name it is generally known among the Chinese. The area is estimated at 20,000 square miles; much of it is mountainous and still inhabited by unsubdued aborigines, called Lǎ-mú, from the name of the central range.

The port of King-chau is called Hái-kau-so 海口所 or Hoi-hau, and lies on a long narrow spit between the river and a deep bay north; it is the entrepôt for whatever trade the island has with the mainland. There is a good paved road leading along the river up to the capital, two miles distant; a twelve-sided pagoda, 130 feet high, is built on the northern bank, from the top of which a wide prospect can be had across the Straits to the opposite coast of Luichau. The city of Kingchau is the largest one in the southwest of the province of Kwangtung; some of the streets are a mile and a half long, and all flagged with large slabs of

cut stone. The inhabitants are civil, and the authorities have treated shipwrecked crews kindly, after they have escaped from the clutches of the wreckers, who line the coast, and generally strip the unfortunate mariners. King-chau has not yet been formally opened to foreign commerce; it was inserted among the list of legalized ports without any definite knowledge of its resources or accessibility, and in the expectation that a port opened in this region might gradually develop new outlets of traffic. The productions of Hainan partake of the tropical and temperate zones; cocoanuts, betel-nut, fruits, sugar, cotton, salt, lacquer-varnish, beeswax, tanned hides, and rice, are produced for exportation; gold, silver, pearls, sapan-wood, tortoise-shell, and many kinds of fine cabinet woods, are found in or near the island. The native trade of Hainan is carried on in small junks, which coast along from Hoi-hau to Tienpeh, and thence up to Macao and Canton; and their crews generally bear a character for lawlessness and bravery, that render them formidable.

Section 4.

PORT OF AMOY.

THIS port is the most accessible of all the consular ports in China, and no pilots are required either in entering or departing, though boatmen frequently board ships to offer their services; some regulations were formerly issued requiring British merchantmen to engage pilots to and from the Chau-chat rocks, but it is now optional. The name Amoy is the local pronunciation of Hiá-mun 廈門 i. e., Gate or Harbor of Hia. It is the station of an admiral, who has charge of the coast of Fuhkien and Formosa, and who is assisted in his duties by a general residing on Quemoy, or Kin-mun I. Amoy is in the district of Tung-ngán 同安, one of the subdivisions of Tsiuenchau-fú 泉州府, or Chin-chew, whose prefect city lies northeast of it. Both Amoy and Chinchew were celebrated even before A.D. 800 as emporia, and their traders were formerly found in the ports of the Archipelago and India, and as far as Persia. Europeans began to trade at Amoy very soon after their appearance in China; and in 1624, the Dutch established themselves on Fischer's I., one of the Pescadore group, in order to control the coast trade of Fuhkien province. The English and Portuguese also had commercial establishments at Amoy, and sent ships there as late as 1730 or thereabouts, when the Chinese government centred all the foreign trade at Canton, and only permitted Spanish ships to trade at Amoy.

The city lies on the southwestern corner of the island of Amoy, near the mouth of the Lung-kiáng, or Dragon river, which leads westerly to Chángchau-fu. The island is about forty miles in circuit, and is covered with small hamlets, whose total population is estimated at 100000, and that of the city and suburbs at over 200,000. The scenery

within the bay is picturesque, but the nakedness of the gullied water-worn hills, whose scanty vegetation cannot hide their bleak sides, detracts from its beauty; some of the islands are surmounted by pagodas or temples, which serve as landmarks to the mariner. Few cities are more favorably situated for access than Amoy, but its water communication with the interior is not equal to some of the other maritime consular ports.

The islet of Kulang-su 鼓浪嶼 bounds the western side of the harbor, here about 700 yards wide; it is nearly three miles in circumference, and contains many residences of the foreign merchants, pleasantly situated along the shore or on the hills. The inhabitants of this islet were completely driven out from their villages in 1854 by insurgents; but have since partly resumed the cultivation of their fields. The docks recently built at this port accommodate ships which are not over 300 feet long; and the facilities for repairing vessels are increasing.

CUSTOMS' REGULATIONS FOR THE PORT OF AMOY.

1. The limits of the port are defined within lines drawn from the southernmost point of Amoy Island 白石頭 south-eastward to the nearest island; and thence, in the direction of the high pagoda, to the point of Lam-tai-hoo hill 南泰武; and from the northernmost point of Amoy Island 新船地 to the opposite point on the mainland.

2. The shipment and discharge of cargo can only be carried on in the inner harbour between Kulang-su and Amoy: northern and southern limits, 新船地 and 廈門港. The authorized Customs' jetties for the examination, landing, and shipment of goods, are those known as the Taou-mei-ma-tau 島美碼頭, Kang-ah-kow 港仔口, Sin-lo-tow 新路頭, and Sai-hong 吏口 wharves.

3. Masters of merchant vessels must deposit their ships' papers and import manifest with their consul (if they have no consul, with the Customs) within 48 hours after entering the port.

4. The import manifest must contain a true account of the nature of the cargo on board, and must be handed to the Customs before any application to break bulk can be attended to.

5. The landing and discharging of cargo must be carried on within the limits of the inner anchorage, as defined in Rule 2,—can only take place between sunrise and sunset,—and cannot go on, without special permission, on Sundays or holidays. Cargo-boats employed for the shipment or landing of merchandise cannot make use of other jetties than those specified in Rule 2.

6. When ready to discharge cargo, the consignee must send to the Customs an application in Chinese (and English), giving full particulars of the cargo to be discharged, when he will be furnished with a permit to remove his consignment from the ship by which imported, and to place the same in a cargo-boat. The cargo-boat must then repair to one of the authorized jetties, in order that the goods may be examined and assessed for duty. A "Customs' memo." will thereupon be issued, to be taken to the Bank by the consignee, who, upon payment of the duty therein noted, will be supplied with a "duty receipt." Upon the presentation at the office of Customs of the duty receipt, a "duty-paid order" will be issued. The goods imported may then be removed from the Customs' jetty, and placed in the merchant's godown.

7. In the case of goods to be shipped, the shipper must send them to one of the authorized jetties for examination, with an application in Chinese (and English) for a permit to ship, containing all necessary particulars. The goods will then be examined, and a "Customs' memo." issued, and on the production at the office of the "duty receipt," a "duty-paid order" will be issued, authorizing the shipment.

8. Cargo, for which a shipment permit has been issued, but which cannot be received on board, must be brought to one of the authorized jetties for examination before being reloaded.

9. No transhipment can take place without special written permission.

10. Drawback exemption, or coast-trade duty certificates will be issued simultaneously with the permit for the shipment of the goods covered by them; exemption or coast trade duty certificates for goods imported must be presented simultaneously with the consignee's application for the permit to land.

11. Before application is made for the "Customs' clearance," the export manifest must be handed in. All dues and duties having been paid, the clearance will be issued.

12. Cargo-boats must be registered at the Customs, and must have their respective numbers conspicuously painted on them in English and Chinese characters. No cargo can be transhipped, shipped, or landed, without special permission, except in duly registered cargo-boats.

The trade with Amoy has regularly increased since the port was opened in 1844. The exports consist of Ankoi, oolong, and other kinds of black tea, coarse chinaware, sugar, alum, kittysola, rice, medicines, tobacco, tiles, and iron-ware. The imports present nothing peculiar; raw cotton from India and cotton yarn from England are taken to some extent, and Straits' produce is still brought directly from the Archipelago in native vessels. The total value of the legal trade in English vessels alone during 1855 was over \$1,800,000, which was probably about two-thirds of the entire foreign commerce of the port at that time.

The southwest part of the province of Fuhkien, connected by water with Amoy, is densely inhabited by a vigorous hardy race, who have spread themselves over the neighboring islands and kingdoms, and during many hundreds of years have carried on most of the foreign intercourse between their own and other countries lying on its southern and western borders. In early times, Chinchew, or Zaitun as Marco Polo calls it, drew more of this trade than Amoy. In 1544, the Portuguese resorted to it in large numbers, but in consequence of their ill conduct towards the native traders and country people, the authorities forcibly expelled them, burning 13 ships, and destroying about 450 Portuguese residing there.

Section 5.

PORT OF FUHCHAU.

THE city of Fuhchau 福州 lies on the river Min 閩, at the head of junk navigation. It is, like Canton, the capital of a province, and contains within its walls the yamuns of the governor-general of Min and Cheh, (i. e. the provinces of Fuhkien and Chehkiang,) the governor of Fuhkien, the treasurer, judge, chancellor, and other high provincial authorities. It is likewise the station of the prefect of Fuhchou, and also of the two district magistrates of Min 閩 and Hau-kwán 候官, whose jurisdiction extends only a few miles beyond the city walls. By means of the river Min and its branches, which drain the region south of the Bohea hills, a large internal trade is carried on between the city and the northern parts of the province, and much produce finds its way to other parts of the empire by sea.

The foreign trade at Fuchau is of recent growth compared with that of the other four ports opened by the treaty of 1842, nor did it have much foreign trade in early times, owing to its distance from the coast, and the opposition of officials. Legal commerce began there in 1843, but the local authorities opposed it indirectly, until after the year 1853, when Shanghai having been captured by insurgents, attention was directed to this city as an outlet for the souchong and congo teas raised in the Bohea hills, which had usually been taken northward. The tea-men then began to bring their stocks down the headwaters of the Min and on to Fuchau, and the next year, oolung teas were also taken there. Opium had previously been sold at the stations below Kinpai Pass and at Pagoda island, and a few cottons and woolens had been bartered at the city; but the whole trade hardly occupied the time of half a dozen agents living there, until this diversion of the tea took place, since which it has steadily increased.

The walled city, about eight miles in circuit, lies more than two miles from the river, and is connected with it by a closely built suburb called Nantai. The river here runs nearly east, and the city is on the northern bank. At the end of the suburb is the islet of Chun-chau, connected with the main by a long and substantially built stone bridge, one of the celebrated features of the place. This islet is nearly covered with buildings, and not unfrequently overflowed by the freshes in the river. A small stone bridge joins it to a large island, which extends up and down the river about eighteen miles, and presents in its wooded hills, terraced slopes, well watered valleys, and cultivated fields, the most beautiful scenery near any of the ports on the coast of China. The foreign storehouses and dwellings are built both on Chun-chau and on the opposite shore of the large island; the stream between is nearly covered with the cargo boats required in the traffic. The streets are narrow, and the native houses in this part of the suburbs built closely together. All the consuls have their offices here, though the British consulate still holds a house within the city walls, where it had been first established in 1845 to resist the supposed desire of the people to exclude foreigners from the gates. A few foreigners reside within the walls, and there is no restraint upon their movements in its suburbs, or among the neighboring villages. It is the only one of the five ports which has not been attacked by an invading force and half destroyed during the last ten years.

CUSTOMS' REGULATIONS.

I. The port shall have been considered to have been entered by any vessel that has passed Kinpai.

II. On entering the port, tide-waiters will be placed on board.

III. The place at which the shipment and discharge of cargo must take place are Pagoda Island, Kusban, and that part of the river between the Bridge and the Teenhow temple.

IV. Vessels must, if possible, within forty-eight hours after entering the port, deposit with the consul their papers and manifests. If there be no consul, these must be deposited with the Customs.

V. Manifests must be signed by masters of vessels, and must contain all particulars, quantity, marks, numbers, &c., and any changes must be made within twenty-four hours.

VI. Landing and discharging of cargo or ballast can only take place between sunrise and sunset, and cannot go on without special permission on Sundays or holidays.

VII. When ready to discharge cargo, the consignee must send to the Customs an application in Chinese (and English) giving full particulars of the goods to be discharged, on which he will be furnished with a permit to remove his consignment from the ship by which imported, and place the same on board a cargo-boat. The cargo-boat must then repair to the Customs' jetty in order that goods may be examined and assessed for duty; a Customs' memo. will thereupon be issued, which the consignee must take to the Bank, when on payment of the duty as noted in the Customs' memo. he will be supplied with a receipt; this receipt he must then take to the office of Customs, in return for which he will be handed a "duty paid order," upon which he may remove his consignment from the Customs' jetty and place it in his godown.

VIII. In the case of goods to be shipped, the shipper must send them to the Customs' jetty for examination, with an application in Chinese (and English) for a permit to ship, containing all necessary particulars. The goods will then be examined, and a Customs' memo. issued, and on production at the office of the bank receipt, a "duty paid order" will be issued, upon which the shipment may take place.

All cargo boats proceeding to or from the ship at the Pagoda island, must call at the Pagoda station for examination.

IX. Goods "shut out" must be taken to the Customs' jetty for examination before being re-landed.

X. All cargo-boats must be registered at the custom-house, and must have their respective numbers conspicuously painted on them in English and Chinese characters. Without special permission no cargo can be landed or shipped except in a cargo-boat duly registered and numbered.

XI. Before application being made for the Customs' clearance, the export manifest must be handed into the Customs.

XII. No transhipment can take place without special written permission.

XIII. Drawback and exemption certificates will be issued simultaneously with the permits for the shipment of the goods covered by them, and exemption certificates for goods, duty paid at other ports, must be presented simultaneously with the application for permit to land.

The officer nominally in charge of the customs is the Manchu commandant or *tsing-kiun*, often styled the Tartar general. He receives the revenue and transacts business through his deputy, usually known by his title of *hai-kwan* 海關 who has an office on Chun-chan. The foreign inspector's office is on the opposite shore.

Among the local weights at Fuhchau, it is well to know that the catty weighs the same as the English pound, and a picul is therefore only 100lbs. av. The custom-house standard is gradually coming into use among the people, but disputes may be avoided by inquiring what weights are to be used before settling contracts. In the early days of the trade at Fuhchau, payments for small articles and incidental expenses were usually made in paper notes of 300, 400, 500, or 1000 cash or more, issued by the local city banks. The influx of silver has somewhat supplanted these notes, and the bad management of the establishments caused others to be worthless, so that they are not so current as ten years ago; the notes themselves are beautifully and elaborately engraved and stamped, and ornamented with Chinese mottoes and explanations in different styles of character, designed to prevent counterfeiting. The bills are all numbered, and stamped with the private seals of the bankers in such a way that when they are cut out of the book to be issued, one half of the seal and number remains in the possession of the banker. The number of counterfeit notes is very small, partly in consequence of this mode of proving the genuine bills inducing holders to take them to the bank, and to the difficulty of imitating the dies.

At the anchorage near Pagoda island are two or three foreign ship-chandlers; intercourse is kept up with the town in native boats. The

rates of pilotage from the White Dogs to Sharp Peak island is \$3.00 per foot, and \$1.50 per foot thence to Pagoda island. Tow boats are employed to assist ships in going up or down the river, each of which get fifty cents for the job; as many as sixty boats are often needed for a large loaded vessel. Schooners, lorchas, and other small craft easily ascend to the city.

The only important export from Fuhchau is black tea, and opium still continues to be the largest import. Native merchants send large amounts of dried and fresh fruit, paper of various qualities, coir ropes, trunks and mats, medicines, and poles for joists, piles, and ship-building, to the northern ports, and receive therefrom silk, fruit and medicines. A few foreign articles besides opium only reach the interior in exchange for tea, as lead, iron, longcloths, and watches, but their total value is not twenty per cent. of the export trade. The value of the imports in foreign vessels during the last half of 1861 was \$4,719,358.42, of which 3,212½ chests of opium constituted \$2,309,740, or almost one-half. The exports during the same period amounted to \$5,195,898.87, of which only \$405,143.87 were sundries; the remainder was tea, 24,459,205 lbs., worth \$4,790,755. Of the smaller sum, the largest item was for 88,813 poles and spars, worth \$261,998.35.

Duties are paid to the Customs in dollars at a discount of six per cent; sycee is procured in the market at a premium of 8 or 9 per cent. The iron cash which were forcibly put in circulation about 1854 by the authorities of Fuhkien have mostly gone out of use, as must have sooner or later followed, even if the trade had not brought in specie. Treasure is sent into the interior for the purchase of tea, or orders are obtained from the native banks upon their correspondents in the tea districts.

Section 6.

PORTS OF TANSUI AND TAIWAN IN FORMOSA.

THE island of Formosa, or Taiwan 臺灣, has belonged to the Chinese empire only since the year 1683, previous to which it was under the sway of a Chinese chief named Koxinga, who drove out the Dutch garrison at Fort Zealandia in 1661. His son was conquered by the troops of Kanghi, whose successors have gradually extended their sway easterly over the country as far as the ridge of mountains. The length of the island is 245 miles, its widest part nearly 100, and the area is estimated at 14,000 square miles, of which about 10,000 are under Chinese jurisdiction. It is divided into four *hien* or districts:—Taiwan, 臺灣 which includes the capital; Fungshan, 鳳山 comprising the southern end of the island; Kai-i, 嘉義 lying north of the capital, and formerly called Chū-lo 諸羅; and Chang-hwa 彰化, which is the largest and comprises the northern part. Each of these districts contains several towns, wherein the aborigines are more or less intermingled with Chinese.

Taiwan (*i. e.* Terrace Beach) is both the name of the prefecture and of the capital city, lying about two miles from the coast; it is estimated to contain about 100,000 inhabitants, and is comparatively a well built

city. Foreign vessels began to resort to Ta-kon or Ta-kiáng 大港 at the mouth of the river leading to Taiwan city in 1854, and at Ta-kow or Ape's Hill about thirty miles south of it. Receiving ships laid at the anchorage, and the authorities permitted trade on payment of the customary duties, and a fee of \$150 on each ship loading at the port. Rice, beans, sulphur, sugar, fruit, camphor oil, gum, and timber, hemp, and green tea are procurable. This is the most accessible point for ships, and will attract whatever trade is likely to be developed. A British consul was stationed at Taiwan for a while, but he has since removed to Tanshui.

Tanshui ting 淡水廳 or Tamsui, (*i. e.* Fresh-water town) is a small district lying within the limits of Chang-hwa hien, whose magistrate holds his office independent of the other, and resides at the chief town near the seashore. Its trade is rather larger than any other port in the island in consequence of its secure harbor and easier access. The limits of the harbor are defined by the bar at the mouth of the river to seaward, and the gorge runs four miles up the river to landward. The British consulate is hitherto the only one opened; regulations have been issued for the guidance of British seamen resorting to Tanshui, one of which forbids mud or other ballast to be thrown overboard in the harbor. Native pilots are employed in bringing vessels into port.

The articles of trade are much the same as at Taiwan; and their total value far greater. The capitalists of Amoy and Changchau have been the principal supporters of the trade with Formosa, and its rice, sugar and fruit are chiefly sent to those cities. The resources of this fertile island have been inadequately developed since it came under Chinese control, in consequence of their harsh treatment of the aborigines, and much of it lies untilled and useless. Mangkiah 孟甲 is one of the largest interior towns in the north of the island. Kí-lung 雞龍 or Killon, at the northern end, was a Spanish colony for many years, whose settlers were driven away by the Dutch in 1628. The coal to be obtained near Kilung attracts ships thither, and in the course of time its preparation may develop the native industry.

Section 7.

PORT OF NINGPO.

THE city of Ningpo, 寧波府 *i. e.* Peaceful Ripples, is the capital of the prefecture of the same name, a fertile plain lying in the south-eastern part of the province of Chehkiang. The city is well situated at the junction of two streams, which together form the Ta-hiah or 大挾江 Ta-tsieh River. The northern branch leads to Tsz'ki and Yü'au, the southern to Funghwa; all of them receive several names during their course from their sources out to sea. This city has been the resort of traders from the earliest times; it was the principal port of China north of Chinchew during the Ming dynasty, and carried on much commerce with Japan. Its trading mart was called Liampoo in the early travels, and such were its advantages that the Portuguese and others

settled there in considerable numbers under their own officers, intending to make it the foundation of a colony, and enlarge its jurisdiction at the expense of Chinese territory and power. There were 3000 men in it, of whom 1,200 were Portuguese, and the rest Christians of other nations; when in consequence of their arrogance and the evil conduct of one Lancerote Pereyra, which exasperated the Chinese, their authorities and people hastily gathered a force, and attacked it with 80,000 men, and a fleet of 300 junks in 1542. F.M. Pinto, who gives an account of the trade of the place, tells of the evils that "fell on this misfortunate colony." He adds, "the matter passed in so strange a manner for them, as I must confess I have not capacity enough to recount it sufficiently, neither understanding enough to imagine it; only it shall suffice me to say, as one who saw it, that in less than the space of five hours (which this dreadful chastisement of the hand of God endured) these cruel enemies left not any thing at all in Liampoo to which one could give a name, for they demolished and burnt all that they could find; they put to death withal twelve hundred Christians, amongst the which were eight hundred Portugals, who were all burned alive in five and twenty ships and two and forty junks. It is said, that in this common ruin, there was lost to the value of two millions of gold, as well in lingots [of silver], pepper, sandal, cloves, mace and nutmegs, and other commodities: and all these disasters arrived by the ill conscience and little judgement of an avaricious Portugal."

The port begins at the river's mouth, and "includes all the portion of the Yung kiang 甬江 or Ningpo river, comprised within a line from the northern extremity of the Chinhai promontory, called by the Chinese Chau-pau-shan, to the islet known variously as the Inner Triangle, the Pasyen I., and the Hu-tsun-shan; and a second line running from the said islet to the northern base of the hill on the eastern side of the mouth of the Yung river, known as Lookout Hill." The rates of pilotage are \$3 from and to Square Island, and \$10 from and to Chusan I. In entering the mouth of the river, there is liability to calms and strong gusts from the hills, and unless there is a leading or easterly breeze, the ship had better be dropped up with the tide to above the fishing-stakes; for between them and the rock at the entrance on the port bow, there are many sunken junks and much stone ballast, which render it unadvisable to anchor. Ships drawing not over fourteen feet water enter with little difficulty; they should take the channel south of the Triangle Is., at about a cable's length off. The spit of sand on the northwest point of the Middle Triangle has increased in elevation since Collinson's survey, and a wide berth must be given it, when a ship comes through the Middle Channel; heed must be taken, too, of the spit off the east side of the Inner Triangle.

Shipmasters at Ningpo should be careful to have their water brought down from six or eight miles up the river, as the stream is brackish off the city, and the boatmen will declare that their tubs are filled high up, when to save labor they have loaded them just beyond the walls. Residents use rain water, which cannot be had in quantities for ship's tanks; many crews have been attacked by diarrhoea from drinking bad river water. The humid springs and hot summers of this flat region bring disease to foreigners, who should be cautious about their food, and how

they expose themselves to the sun or dew; chronic bowel complaints are very common. In winter, Malays and Lascars are liable to suffer from frozen hands and feet, and often injure themselves by putting these members in hot water to relieve the pain. On the other hand, European sailors need to be very careful about exposing themselves to the sun in summer, the heat being more hurtful than even in the tropics; cases have been known where a man has been struck to the ground as if by a shot, and death ensue in a few minutes.

Ships are supplied with provisions alongside, and what is worse too, with spirits. About 25 lbs. of beef, 12 lbs. of mutton, 28 lbs. of bread, 18 lbs. of biscuit, or 12 lbs. of poultry, could formerly be procured for a dollar, but prices are now nearly doubled. Laborers on board ship receive three mace per day each, and a boat to wait on a ship can be had for \$5 a month.

In conducting business, it must be borne in mind that weights and measures differ somewhat in every part of China. Mistakes often take place in consequence, and merchants having commercial dealings at the ports open to foreigners, should if practicable reduce everything to custom-house standard. Care should be taken when goods have been sold to deliver them as per muster, and if necessary, before witnesses, lest the market falling, the purchaser should damage them and say that he received them in that state, as a pretext to throw up his bargain. In buying goods, every package should be examined before being removed from the seller's premises in order to guard against false packing and other frauds. Merchants should get a purchase note, without which document, in the event of fraud or failure, the sufferer would find difficulty to establish his claim in a Chinese court of law.

The trade of Ningpo in recent times has gone to Shanghai; and lately it has not equaled those of the other four consular ports, owing chiefly to its nearness to Shanghai, to which place the silk and tea are more readily carried. The opium trade has always formed a large portion of the commerce, and that in salt has employed some vessels; and besides these causes, the legitimate trade has been interfered with during the past ten years, and reduced by the pirates, which infest Nimrod Sound and the Chusan archipelago, and by the collisions between the Portuguese and Cantonese respecting the right of convoy. The civil war in the adjoining regions has further compromised the trade of Ningpo, so that it has not attained even to the importance it might have done under better circumstances.

The custom-house regulations in relation to loading and discharging ships are like those at Fuhchan. The trade is now chiefly coastwise, and most of that with Shanghai is carried on in small native boats and in foreign steamers. Sugar, rice, alum, tea, and silk, are articles of native trade; but the city and province have received such a shock by the ravages of the insurgents, that years of peace will be required before they can recover. On the whole it can hardly be denied that Ningpo, since it was opened in 1844, has suffered more than it has been benefited by foreign intercourse, though it is difficult to draw the line, and say how much of its misfortunes have arisen from its intercourse with foreigners, who have too often aided or countenanced unscrupulous natives in violating the laws.

The city suffered much at the hands of the Nanking insurgents, who captured it in 1862 and kept possession for several months, plundering and destroying everything within the walls; to such a degree that when they were driven out by the English in May, it was found to be little better than a ruinous heap. All the inhabitants who could get away, had fled,—many hundreds to the north bank of the river in or near the foreign settlement, where they were sure at least of their lives. The Chinese authorities, in conjunction with the foreign officials, under the pressure of the circumstances, defined the limits of the foreign settlement, and allowed the consuls to organize such a system of police and jurisdiction over all the people dwelling within it as could be carried into effect. It is probable that the hope of security will induce large numbers of the natives to remain on the northern shore, rather than rebuild their houses in the city.

Excursions are made into the surrounding country at pleasure, and sometimes parties remain abroad for days. It is needful to caution persons going among the people anywhere in China not to offer wanton disrespect to the temples or idols of the people, nor to desecrate or injure tombs, nor to force their way into houses; in short, not only to do no positive injury to the people, but to guard against doing anything to shock their prejudices. Many foreigners act as if they thought the Chinese had no more rights than slaves, and looking upon them as ready to cheat in trade whenever they can, take the badness of the native character as the excuse for their own misdeeds.

Section 8.

PORT OF SHANGHAI.

THIS port was visited to ascertain its commercial importance by H. H. Lindsay of the E. I. Company's Factory at Canton in the "Lord Amherst" in 1832, and his voyage along the coast made known its commanding position as the entrepôt of the trade of the Yangtze' kiang, and directed attention to its superiority to Canton. Ten years afterwards it was captured by the English forces, and trade commenced under the Treaty of Nanking in 1843, since which time its foreign commerce has rapidly increased, and that in native vessels has greatly diminished.

Shanghai 上海, or *Zong-hé* as its citizens pronounce it, is the chief town of one of the eight districts forming the prefecture of Sungkiang 松江, in the extreme southeast corner of the province of Kiangsé. The city and its inhabitants have both suffered greatly in late years. On September 8th, 1853, it was seized by armed insurgents within the walls, who kept possession till Feb. 17, 1855; during this interval the Imperial troops were vainly endeavoring to regain their authority, although at one time assisted by a force of French marines; at last the insurgents themselves evacuated the place, leaving it and the suburbs almost wholly destroyed. It was rapidly rebuilt, and the suburbs especially had been constructed in a better manner, when the English

and French troops, in 1860, burned that part lying east of the city, as it was said to enable them to defend the city walls against the insurgents then approaching.

The town lies on the western bank of the Hwangpú 黃浦 river, sometimes improperly called the Wusung 吳淞 river, from the small town of that name near its mouth. Its walls are $3\frac{1}{2}$ miles in circuit, but the suburbs are now much larger than the city, and are continually extending. The foreign settlements lie on the north side, and are collectively far more populous and important than the city itself. The French now occupy the space next the walls along the north side, separated from the British Concession by a creek called the Yang-king-pang 洋涇浜, and thence along the eastern wall down to the river bank, as far as the Roman Catholic church. The British settlement is the largest, reaching from the Yangking-pang about a mile north to the Súchau creek, or Wusung kiang 吳淞江 as the natives call it, and westward into the country more than twice that distance. A large native population has gradually collected within its limits, some seeking that protection and security which they vainly look for in their own country, and others hoping to escape from the control or vengeance of their own rulers. North of the Súchau creek, and connected with the British quarter by a drawbridge, lies Hung-kan 虹口 or Hong-que, (a name taken from the creek leading through it,) popularly known as the American Concession, and without any definite limits. The opposite shore east from the city is generally known as Pu-tung 浦東, and is still thinly settled. The estimate made of the population of these separate districts and the city at the end of 1862, was a million of people, including the refugees and official retainers.

These outlines will enable the newcomer to understand the topography of the city and suburbs. The area under the control, and more or less occupied by foreigners, measures eight or ten square miles, the whole of which is rapidly filling up with dwelling houses. The government of this community is still imperfectly constituted. In the English quarter a municipal council is chosen by the land renters, which superintends its internal affairs under the English consul, by means of a Committee of three or four persons annually elected. They are guided by a body of regulations drawn up by the residents themselves, assisted and sanctioned by the French and American consuls, who have undertaken to see them enforced over all their countrymen living within the limits; Chinese who are arrested for their offences, are examined, and when guilty handed over to the Chinese authorities. In the French quarter there is a council, but in the American quarter there is yet no organization. There have been some doubts expressed as to the power to make and execute these laws in this manner, and the government rests rather on the necessity felt for some well understood plan of action, and the unanimity and public spirit of the community for carrying it out, than on a legal foundation municipally; and probably all these nominal divisions will gradually be absorbed into an efficient and general government, making the whole a free city. A body of foreign police is maintained by the municipality; and the exigencies of the community to

provide for their own safety, have compelled them to extend their authority more and more over the crowds of natives resorting to the settlement. The necessary funds for making and repairing streets, roads and jetties, for lighting streets, and maintaining the police, are raised by direct taxes on land and houses, and by a wharfage rate levied on all goods landed or shipped; they amount now to about \$25,000 a year.

The native government of the city and district of Shanghai is in the hands of a *chi-hien* 知縣 or district magistrate, assisted by a body of civil and military officers, who are all under the supervision of the *tai-tai* 道臺 or intendant of circuit. This officer has the nominal control of the three departments of Súcchau, Sungkiang and Tai-tsang, but his chief duties are in connection with the foreigners and their commerce. His official designation is *Kien-tuh Kiang-nán hái-kwán, fan-siun Sú Sung Tái ping pí táu* 監督江南海關分巡蘇松大兵備道, and he ranks next to the highest dignitaries of the province. The superintendent of customs of the southern ports, who is superior to the intendant, has his office at Shanghai; but the limits of his superintendence are not yet fully understood. The disturbances of the last few years in the province have driven the provincial officers from Súcchau to take refuge at Shanghai, and it is not improbable that it may ultimately become the capital of Kiangsu.

Owing to the entire suspension of the power of the local officers of the Chinese government, when the insurgents captured Shanghai in 1853, and the consequent confusion in the customs, it was agreed between the Tantai and the treaty Consuls, to establish a foreign Inspectorate of Customs composed of three persons, one appointed by each of the consuls of the three powers, whose duty it should be to have a general superintendence of the foreign customs of the port, and form regulations for making the service effective, all to be done with the consent and under the supervision of the Chinese authorities. This system went into operation July 12th, 1854, and proved to be so acceptable to the higher officers, that they agreed in 1858 to the extension of the same system, under some modifications, to all the other ports.

The entrance to the port of Shanghai is the most perplexing and dangerous of any of the open ports in China, and many vessels have been lost since the trade commenced. A company has recently been formed for the more effectual and safer pilotage of vessels approaching the port. This company is managed by a Board, consisting of the agents and surveyors of the local insurance offices, assisted by a superintendent, which appoints apprentices, grants licenses, and collects pilotage. Their tariff of pilotage on the Yangtze' and Hwangpu rivers is as follows:—

From Gutzlaff S.S.W. to Shanghai or <i>vice versa</i>	Tls. 5.00	per foot.
" Light-ship North "	4.50	"
" Wusung "	2.50	"
" Gutzlaff S.S.W. to Wusung	3.00	"
" Light-ship, North "	2.00	"

Wusung to be considered as extending from the usual anchorage outside No. 8 buoy, to the French coal go-down, at the option of the vessel piloted; and in consideration of the loss of time incurred occasionally by having to wait for water on the inner Wusung Bar, the sum of ten taels should be charged for each day the pilot is so detained beyond forty-eight hours.

RATES FOR DOCKING, &c., IN SHANGHAI.

For unmooring, mooring, and docking, if the vessel be above Putung Point, @.....	Tls. 1.50 per foot.
„ unmooring, mooring, and docking, if the vessel be below Putung Point.....	1.25 „
„ shifting a vessel's berth, including unmooring and mooring, if in the same reach.....	1.00 „
„ shifting a vessel's berth, including unmooring and mooring, if from one reach to the other.....	1.25 „

In all cases where a pilot is in charge of a steamer (not being a tug-boat) towing in another vessel, he shall be entitled to receive full pilotage for the vessel of the larger draught, and half pilotage for the vessel of the smaller draught.

In any case where a vessel having a licensed pilot on board is followed by other vessels without pilots, that vessel only, next to the one piloted, shall pay half pilotage for the distance followed.

Any vessel taking her pilot to sea, through stress of weather or other unavoidable circumstances, shall pay such pilot the sum of ten taels per diem for each day he may be absent from his pilot ground, including the day of his departure and that of his return thereto: any expenses incurred by such pilot for passage-money back to be defrayed by the vessel in question. But should he be carried away in consequence of the absence of the pilot boats from their station, then the master shall be bound to pay only the customary pilotage, using, however, his best exertions to put the pilot on board some inward bound vessel, or, failing this, to land him on the earliest opportunity.

This tariff of charges is to be exhibited by every pilot on boarding a vessel to the master thereof, and his position and consequent rate of pilotage explained.

The bye-rules for the guidance of the pilots of this Company embody the rules generally agreed upon in China, wherever the circumstances are such as render them applicable.

BYE-RULES FOR THE GUIDANCE OF SHANGHAI PILOTS.

I.—Every pilot shall be held responsible to the Board of Management for the proper and complete discharge of his duty, for any neglect of which he will be liable to fine or dismissal, according to the circumstances of the case.

II.—It shall be incumbent upon every pilot on his return to Shanghai to report himself at the Office, where a register of his name and address will be kept, and any alteration in the latter must be immediately communicated to head-quarters.

III.—It shall be the duty of each pilot to take his turn in piloting—a rule from which no departure will be allowed upon any account except sickness, for which a medical certificate will be required by the Board of Management.

IV.—Upon application being received at the office for a pilot, the draught of water of the vessel to be piloted shall be ascertained; and if she draw more than 15 feet, the next full pilot shall be appointed, or if less than that draught, the next 15 feet pilot will take charge of her. In the event of only one class of pilots being available, then the next in turn may be appointed, irrespective of draught of water. The same rule to apply under similar circumstances at the other stations.

V.—Should there be no pilots on board the schooner, apprentices may take charge of vessels entering the river to run them into safety, or until they fall in with a pilot, but in no case will they proceed beyond the Red buoy with a vessel drawing over 12 feet.

VI.—If there be two or more apprentices on board the schooner, then the senior one will take charge of the vessel to be piloted.

VII.—Each pilot upon taking charge of a vessel, either inwards or outwards, shall, whenever it is convenient, be accompanied by an apprentice, and it shall be the pilot's duty to teach such apprentice, and afford him every facility for learning the navigation of the river.

VIII.—Apprentices shall be bound to attend to all lawful orders of the senior pilot of the station at which they are, or of the pilot under whom they may for the time be serving.

IX.—All lawful orders of the senior pilot present shall be attended to, he being responsible to the Board of Management for the propriety of such orders.

X.—All pilots and apprentices will be expected to give their assistance when necessary in working the schooner and boats of the Company, and to use every exertion to preserve its property and reduce the working expenses.

XI.—In the event of an apprentice taking charge of a vessel, he shall keep the union jack flying as a signal to the first qualified pilot coming in sight.

XII.—On boarding a vessel inward-bound, it shall be the duty of the pilot to present his license, together with a copy of the rules of the Company, to the master, from whom he shall obtain information as to draught of water, and satisfy himself as to the state of anchors and chains; and also of the lead lines, the correctness of which he shall prove by actual measurement made by himself.

XIII.—In the event of the crew of an inward-bound vessel being, through death or sickness, too weak to properly work her, it shall be the duty of the pilot to anchor in the safest spot he can reach, and there remain until assistance be received from Shanghai.

XIV.—Upon being appointed to take charge of a vessel in Shanghai outward-bound, the pilot will at once proceed on board and ascertain that her decks are clear, anchors and chains, masts, yards and sails in proper order, with a sufficient crew to work her. He shall also satisfy himself as to draught of water, and see that the vessel (if not provided with regulation lamps) has at least the means of showing two good lights at any time they may be required; and he shall further make the necessary arrangements with the captain as to the time of starting, and forward to the office a note of the same, together with the draught of water, for the information of the superintendent.

XV.—If any pilot, on proceeding to move an outward-bound vessel, has reason to think that her crew is so weak, or otherwise inefficient, as to be unable to properly work her, he shall advise the superintendent of the same, and pending his instructions refuse to lift the anchors.

XVI.—A pilot having once taken charge of a vessel, shall, on no account, leave her before completing the service for which he was placed in charge of said vessel, unless in case of sickness or other unavoidable necessity.

XVII.—Each pilot, while in charge of a vessel, shall use the utmost diligence in completing the service; and if impeded in his duty by the master, mate or any of the crew, will report the same to the superintendent.

XVIII.—Should a vessel unfortunately get aground, the pilot in charge will on the earliest opportunity forward to the superintendent a report of the accident, containing the bearings of any known object in view, the ship's draught of water, the time of tide, the day and hour when the accident happened, the nature of the bottom, and fall of tide after she grounded, the length of time she lay aground, together with any other information he may deem desirable.

XIX.—Steamers meeting are to pass each other on the port side.

XX.—Steamers, with or without ships in tow, likely to meet in a narrow passage—or when, from another vessel being in the way, it may be difficult to pass, the one going against tide is to cease her steam until the other has cleared the difficulty; and every steam vessel navigating a narrow channel shall keep as far as practicable to that side of the fairway which lies on the starboard side of such vessel.

XXI.—Steam vessels under weigh are to be considered in the light of sailing vessels navigating with a fair wind, and are to give way to sailing vessels on a wind on either tack.

XXII.—Vessels under weigh at night will show the usual regulation lights, but in the event of not having them, will hang out two lights on the starboard, and one on the port side.

XXIII.—To prevent accidents from vessels crossing each other on opposite tacks, it is to be understood that the vessel on the starboard tack is to keep her wind, and that on the port tack to bear up.

A harbor-master of the port was appointed in May, 1862, with a staff of officers, under the oversight of the consuls of the treaty powers, and a code of regulations was issued.

HARBOR REGULATIONS AT SHANGHAI.

1. Vessels shall allow themselves to be berthed by the harbor-master within the recognized limits of the loading and discharging anchorage; and in berthing a vessel the harbor master shall comply as far as possible with the request of the master, consignee, or supercargo, as to her position.

2. Vessels shall, on being berthed, rig in jib and spanker-booms, and top or brace up lower and topmasts yards, except when actually needed for hoisting cargo.

3. Vessels shall be moored, and with a swivel, unless their tonnage be under 200 tons. If desired, the harbor-master will furnish a swivel at a small charge, which, if disputed, will be determined by the consul of the nation to which the vessel belongs.

4. Vessels shall be allowed to lash alongside jetties, if desired by the owner, master, or consignee.

5. A sufficient channel shall always be kept open for vessels to pass up or down the anchorage.

6. Should the harbor-master not be at hand to berth a vessel on her entrance into the anchorage, she will be expected to berth herself as much in accordance with these regulations as possible.

7. These regulations do not modify or affect any of the obligations or rights of vessels under the laws of seas and rivers recognized by civilized nations.

8. A breach of any of these regulations shall be visited with a penalty not exceeding one hundred taels Shanghai sycee, which shall only be inflicted on the offender by the consul of the nation to which such offender belongs, provided such nation be a treaty power.

The shipping occupies the river for nearly four miles; the native boats congregate above the foreign vessels, but even now the river does not suffice to accommodate the shipping. There is no manufacture of importance carried on at Shanghai, nor in its immediate vicinity; but if peace in the interior be restored, silk weavers and other craftsmen will probably gradually settle near it, as they formerly did at Canton.

CUSTOM-HOUSE REGULATIONS.

I. The port is limited by a line drawn from Pauhan Point to the battery on the right bank of the river below Wusung.

II. Customs' officers will board ships entering the port, and examine them after clearance outwards.

III. The anchorage is between the Teenhow temple and the new or lower dock. No vessel must move from her berth without express permission.

IV. Masters must deposit their ship's papers and manifest with their consul (if they have no consul, with the Customs) within 48 hours after entering the port. For failing to do this, they are liable to fine.

V. The manifest must contain an account of the marks, numbers and contents of every package on board. For exhibiting a false manifest, the master is liable to fine. Errors must be corrected on the day on which the manifest is handed in to the Customs. If any portion of the cargo be for re-exportation, it must be so entered upon the manifest. Goods found on board not specified in the manifest, are liable to confiscation.

VI. Neither cargo nor ballast can be shipped or unshipped, except within the limits of the anchorage, and between sunrise and sunset on all days, Sundays and holidays excepted.

VII. When a vessel is entered and her manifest received, the consignees of her cargo hand in to the Customs their *applications to land*. These must give the number of packages, with their marks, weight, quantity, and other such like particulars, and be accompanied by their delivery orders. The delivery orders will be stamped and returned to the consignees, who may then land their consignments. If cargo be unshipped without such delivery order duly stamped, it is liable to confiscation, and the master to fine.

VIII. When the whole of the inward cargo is discharged, the vessel is examined by a Customs' officer. Shippers may then hand in to the Customs their *applications to ship*, which must, as in the case of the "applications to land," give full particulars, and be accompanied by their shipping-orders. The shipping-orders will be stamped by the Customs and returned to the shippers, who may then ship their goods. Goods shipped, or waterborne to be shipped without such shipping-order duly stamped, are liable to confiscation, and the master of the vessel receiving them on board is liable to fine.

IX. Cargo which cannot be received on board must not be reloaded until it has first been examined at the custom-house jetty.

X. When the loading of a vessel is completed, a manifest of her outward cargo must be handed in to the Customs by the master or consignee. It must contain an account of the particular marks, numbers and contents of every package on board. For exhibiting a false manifest, the master is liable to fine.

XI. Goods cannot be placed in a cargo-boat, or leave the shore, or be landed, except at the authorized jetties, and then only between sunrise and sunset on all days, Sundays and holidays excepted.

XII. Goods transhipped without special permission are liable to confiscation, and the masters to fine.

XIII. All cargo-boats must be registered at the custom-house, and must have their respective numbers conspicuously painted on them, and in English and Chinese characters. Without special permission no cargo can be landed or shipped, except in a cargo-boat duly registered and numbered.

XIV. Consignees or shippers should apply as early as possible for a Customs' memo. of the duties payable by them. When they have paid the amount into the Hai-kwan Bank or receiving office, a duty receipt in Chinese will be given them, which they must exchange at the custom-house for a printed receipt in English; the latter must be returned to the custom-house by the consignee of the vessel when he desires to clear her. Import duties are due upon the landing of the goods; export duties on the shipment of the goods. Amendment in respect of weights or values must be made within 24 hours after the landing or shipment of the goods. Tonnage dues are payable when the ship has been 48 hours in port, or when any cargo has been shipped or unshipped.

XV. When a vessel's clearance is applied for, her stamped delivery and shipping orders are examined, and if they are found in order, and the Customs is satisfied of the correctness of the inward and outward manifests, and that the whole of the dues and duties have been paid, the clearance is issued, and the vessel is entitled to receive back her papers, and to leave the port.

XVI. Exemption certificates are granted on goods re-exported to a Chinese port.

XVII. Drawback certificates are granted on foreign goods re-exported to a foreign country, within three months from their importation, upon the production of satisfactory evidence as to their port of destination.

XVIII. The custom-house is open for the receipt and issue of all necessary papers from 10 A.M. to 4 P.M. on all days, Sundays and holidays excepted.

The trade at this port has been artificially stimulated during the last two years by the opening of ports along the Yangtze and in Northern China; and its population vastly multiplied by the capture of Szechuan and other cities in the province, whose terrified inhabitants have fled hither to escape the ruthless insurgents. These two conditions of the port will probably change in a few years; the consumption of the ports along the Great River, and their exports severally to other native places and to foreign countries, will not be confounded with those of Shanghai. The refugees, who are waiting in suspense by thousands, will diminish the population by their return home; and the real business and importance of the port appear. The prospects are, that in point of trade and population, Shanghai will become the greatest emporium in Eastern Asia, the center of the steam navigation throughout the Yangtze valley and across the Pacific ocean; and its commercial influence pervade the whole of China.

When the trade opened in 1844, it was carried on more directly with the merchants who brought produce from the interior than it was at that time at Canton, where the routine of the old co-hong still kept them at a distance from the foreigner; and as those country-people could not talk English, they came with brokers to interpret for them, or the foreigners learned to converse with them; the compradors of the Houses became thus more necessary to the conduct of the trade, and formed a sort of guild among themselves. Produce is received in the warehouses, and weighed, examined and prepared for shipment under the eyes of the exporters themselves, and payment made after the goods are found in order. Specie was occasionally sent into the interior on foreign risk to contract for tea or silk, according to the state of the market, but the

disturbances during the last three years have rendered this procedure rather hazardous.

The trade returns from Shanghai, previous to the introduction of foreigners into the Customs, are so imperfect as to be untrustworthy; and until 1859, the omission of opium and treasure vitiated those returns. The estimated exports of tea and silk since 1845, as here given, will indicate the rapid growth of the trade, for those two articles constitute the largest part of the export.

<i>Season ending June 30 of each year.</i>	<i>Total export of Tea, in lbs.</i>	<i>Total export of Raw Silk, in bales.</i>
1845,	3,800,627	6,433
1846,	12,459,988	15,192
1847,	12,494,140	15,972
1848,	15,711,142	21,176
1849,	18,303,074	18,134
1850,	22,363,370	15,237
1851,	36,722,540	17,243
1852,	57,675,000	20,631
1853,	69,431,000	28,076
1854,	50,343,847	53,319
1855,	80,481,577	54,233
1856,	59,299,966	57,419
1857,	19,979,033	76,228
1858,	29,656,951	58,091
1859,	16,980,314	75,670
1860,	32,179,186	61,311
1861,	11,318,232	75,535
1862,	31,593,153	63,719

The custom-house returns for 1861, comprising the total value of the imports and exports from and to Chinese ports, as well as foreign countries, made out the entire trade passing through Shanghai for a year to be 84,161,146 taels; of this sum, 10,081,567 taels were treasure in and out, leaving 74,079,579 taels for produce; of this latter amount, only 5,917,769 taels were for 32,466,542 pounds of tea, 16,702,927 taels for 61,526 bales of raw silk, and 12,138,232 taels for opium.

In 1859, the total value of the trade was estimated to be 73,434,086 taels, and in 1858, at 65,683,086 taels. Of the former sum, tea amounted to 11,677,088 taels, silk to 22,367,041 taels, opium to 16,128,350 taels, and other goods imported to 20,635,120 taels. No estimate of the treasure brought is given for either of these two years. The total amount of duties paid in 1859 was only 2,932,378 taels, which is not nearly as much as was levied on the tea imported from this port alone into Great Britain. The estimated returns of the entire trade of Shanghai give, however, only an imperfect index of the amount of capital invested in it, including steamers, docks, and warehouses.

The currency of Shanghai is reckoned by taels, and not by dollars, as at the ports south of it. The change was made in 1857, in consequence of the extraordinary premium paid for Carolus dollars, which was at that time as high as 40 per cent. above Mexican dollars, and made a dollar actually cost more than a tael's weight of silver. The substitution of

the tael as the unit of currency soon led to a sounder state of the money market, and the valuation of dollars nearer to their real worth; they are now quoted in proportion to the tael, but their convenience in trade and for transmission into the country, still causes them to bear a premium, sometimes as high as 15 per cent., above their value as mere silver. The former fancy of the natives for Carolus dollars has passed over to clean Mexican dollars, which now bear the highest price, the stamped coin being taken only by weight. The Shanghai tael is merely a tael's weight of dollar-silver, and consequently inferior in purity to the *hai-kwan* sycee, and to that found in other northern ports. Bank bills in taels have been issued by the Oriental and other Banks, which pass current through the Settlement, and are gradually working their way into the adjacent country.

The sudden increase of the trade of Shanghai in 1861, owing to the opening of the carrying trade on the Yangtze' and to the coast ports, was attended with many irregularities, increased by the presence of the rebels on the River. The following regulations were drawn up in October, applicable to Shanghai, and intended to remove the disabilities connected with the coast trade in native produce:—

REGULATIONS RESPECTING CHINESE PRODUCE.

I. No more exemption certificates will be issued on Chinese produce carried coastwise from port to port for local consumption, but the tariff duty will be levied on shipment, and a half duty on discharge.

II. Chinese produce, procured at one port, and carried coastwise to another port for exportation to a foreign market, will only be charged export duty at the port of shipment, where the transit duty, if due, will also be levied. But to prevent loss to the revenue, where goods, nominally imported for reshipment outward, are detained for local consumption, they will be charged on entry a half duty, for which a drawback will be issued, on proof being given of their subsequent exportation for a foreign market.

III. Transit duty will not be charged at Shanghai on import goods dispatched up, or export goods brought down the Yang-tze' river.

IV. Chinese produce, carried from port to port between Shanghai and the Yang-tze' river for local consumption, will be treated under Rule I.

V. Chinese produce, entered for transshipment hence, without being landed will not be charged the half duty; but the usual permits must be taken out before the transshipment can take place.

VI. Transit duties, as per tariff rule, will be payable by British merchants only on goods carried into the country, or brought down from it under certificate as foreign property, taken out as provided by the tariff rule. This certificate will protect him from all other inland charges, but it will be optional for him to take out such certificate or not as he thinks fit. Goods not covered by a certificate will be liable, *en route*, to inland charges as per native tariff.

VII. Receipts will be given for all export duties paid on goods shipped for exportation to another port.

VIII. Chinese produce, brought in from another port for local consumption, will be entitled, if again re-exported coastwise, to a receipt for half duty paid, but no export duty will be charged on shipment.

IX. Silk and tea, imported here from Ningpo or the Yang-tze' river for re-exportation to a foreign market, will not be liable under Rule II. to the payment of half duty on entry, but they must be entered for re-exportation when landed.

The details of transit dues and coast trade were also arranged about the same time, and issued under the authority of the British Minister, but were made applicable by the Customs to all nations. The native merchants had, under the old treaties, shipped in foreign bottoms in their coast trade, and willingly paid the higher duties levied on foreign goods.

5. Native produce, accompanied by a certificate that the coast trade duty has been paid at the second port, may be carried to any other port or ports in China without payment of further duty to the maritime Customs.

6. Native produce, carried from Shanghai to Hankau or Kiukiang, or *vice versa*, pays a full import or export duty, and coast trade duty. While the river trade continues under the provisional rules now in force, these duties will be levied at Shanghai. If the produce in question be entered for re-export to a foreign port, the coast trade duty will be deposited and refunded, as provided in paragraph 2 of this Rule.

The system of levying duties and taxes common in Asiatic countries, by which each province or district raises within its own borders what is necessary for its own defense and government, is recognized in China; and these new trade arrangements contravene it, inasmuch as the duties paid on imports and exports at Shanghai do not reach Hankau or Tientsin, either directly, or through the Imperial treasury at Peking. The officers at ports, where drawback certificates are presented instead of cash for import duties, may, in their view of the procedure, reasonably complain at this diminution of their particular revenue, while they are held responsible for the support and management of their particular jurisdiction. The mode of settling this difficulty has not yet been arranged, but as it is one of those questions which affect the Chinese government alone, it will probably be settled by themselves, after the custom-houses opened on the Yangtze have gone into operation.

The Chinese government has never had rules for drawbacks, nor an approach to the system; it could not hope to carry out such plans of paying duties as are involved in the bonding and drawback systems of western countries, with the untrustworthy native agents it has at command. The privilege of re-exporting goods which were unsaleable at the port where they had paid duty, was first clearly conceded in Art. XX. of the American Treaty in 1844, and reaffirmed in those subsequently negotiated with foreign powers. The object of the provision was solely to benefit the foreigner in the sale of his goods, and had no reference to native produce passing from one part of China to another, either inland or coastwise.

When goods are to be re-exported, they are sent to the Customs with the following form filled out, and the packages in the condition required by the treaty:—

DRAWBACK SHIPPING BILL.

Vessel _____		Port _____		
Marks and Numbers.	Description of Packages.	Quantity.	Quality and Description of Goods.	Value.

I, _____ claim Drawback on the abovenamed Goods, imported by

_____ date _____ ex _____

from _____ the duty on which I declare to have been duly paid.

Examined.

(Signed) _____

After examination and approval of the produce, the following certificate is issued in Chinese only, and is valid at the Customs for its amount; the form here inserted is the one now issued at Canton.

DRAWBACK CERTIFICATE.

存 票		大清 督理 粵海 關部 爲
同 治 年 月 日 給	給 票 備 查 事 現 據 國 商 人 報 稱 伊 有 貨 物 因 請 按 例 減 其 稅 餉 本 關 部 業 已 派 人 查 驗 明 白 自 應 照 數 減 成 輪 稅 合 即 給 票 發 交 該 商 收 執 以 備 日 後 完 納 進 出 口 稅 銀 持 此 存 票 照 數 扣 抵 可 也 此 照 計 存 銀	

The drawback certificate issued at the Shanghai Customs quotes the treaty regulations, and is fuller than the above in other respects. There are trifling variations in the form of this and the next certificate used at the other ports, but these will suffice to exhibit their general arrangement.

Exemption certificates are called for by the consignee at the time of their shipment, and are presented at the port where they are taken. They merely state that the within-named foreign goods having paid the legal duty on them, if taken to another port in China, are not to be charged with it again. A time is specified in the certificate when it is null by its own limitation.

EXEMPTION CERTIFICATE GRANTED AT SHANGHAI.

江海關發給免重徵執照

監督江南海關分巡蘇松大兵備道 爲

給發免重征執照事查商人運貨完清稅課復欲改
運別口售賣者驗明實係原包原貨查與底簿相符
並未拆動抽換即照數項給執照准其前赴該口呈
驗俾免重征茲據國商人稟報後開貨物前經
完納稅課今將原貨裝載國第號商船名運
往口售賣當經查驗貨物相符合行發給免重征
執照爲此給照准將後開貨物運赴該口呈照驗明
照者照貨相符准其起貨售賣免其重征須至免重
征執照者計開

同治 年 月 日 給 右照給 商 收執 關日繳

The blanks issued from the Shanghai Customs respecting the trade in the interior, such as the Barrier Pass 卡查單, the Inland Pass 存根, the Inland Certificate 報單根, the memorandum of Inland Duty.

內地貨稅驗單, and the Release Order of Barrier **過卡准單**, are all issued in Chinese only, and need not be inserted. They are much less used than those blanks required for the coastwise trade, and are likely to receive many modifications. On the Inland Certificate, it is the usage to affix a declaration in English, signed by the foreign trader, of his ownership of the goods, and that he will pay the transit duty when the goods reach the Barrier nearest their port of destination, as is required by Sect. 2 of the Transit Dues' Regulations.

Section 9.

'PORTS ON THE YANGTSE', AND TRADE IN THE INTERIOR.

The stipulations of Art. X. of the British treaty of 1858 deferred the opening of the ports on the Great River until its banks above Chinkiang should be cleared of outlaws, and peace restored to the adjacent regions as far as Hankau; but these provisions were set aside in 1860 after the return from Peking. It should be said to the credit of the Chinese Government, that when its high officers had agreed to the commercial changes involved in the new treaties and regulations of 1858, they exhibited no reluctance to carry them out as soon as arrangements could be made. To open the trade of this central river to foreign vessels was a hazardous experiment, while its largest cities were in the possession of rebels; and the authorities hesitated to venture on it. They did so at last, and the ports of Chinkiang, Kiukiang and Hankau, were thrown open to commerce in 1860. The insurgents occupied Nanking at this period, and commanded a score or two of miles of the southern bank west of it, but steamers passed by their ports, and hitherto they have not seriously molested the trade.

A brief notice of the region watered by the 'Yangtsz' is all that is here necessary. The name of this river on foreign maps thirty years ago was Kyangku, which was oddly misapplied from Du Halde's map by taking the words Kiang-kau **江口** i.e. River's mouth, as the name of the river itself. On Chinese maps, it has no single name; the foreign designation is derived either from **洋子江** the Son of the Ocean's River, or more probably from **楊子江** the River off Yangchau, the large city north of Chinkiang on the Grand Canal. Its most common terms among the natives are Ta-kiang **大江**, the River, or the Great River, and Chang-kiang, **長江** the Long River; these names are dropped near the junction of the rivers Kialing or Min in Sz'chuen, for that of Kinshá kiang **金沙江** or Gold-sand R., which is retained to the junction of the Wúliang kiang, after it leaves the province of Yunnan and reënters Sz'chuen. Thence it is called **Plutsu ho** till beyond the Tibetan frontiers, where its main stream is called Murus-ussu, or Tortuous waters; these last names are Tibetan words. The entire length is over 3,000 miles, and in respect to its navigableness and uniform sup-

ply of water, the vast population of its shores, the fertility and productions of its basin, and the arrangement of its own channel running from west to east, while that of its numerous tributaries come in from the north and south, it is unequalled by any river in the world.

Proceeding up the stream, the first large affluent of the Yangtsz' is the Yun-ho 運河 or Grand Canal, which enters it on the north side opposite Chinkiang, and since the silting up of the Yellow River, now drains the largest part of both Kiangsu and Nganhwai provinces, through the lakes and rivers which here discharge their surplus waters. The next in importance, not enumerating six or eight lesser ones in Nganhwai, is the Kán kiáng 贛江 in Kiangsi, which comes in through Lake Poyang 鄱陽 at Húkau; by this means all the cities in that province are rendered accessible to other parts of the empire. The River Hán at Wúchang fú is the next large tributary; it opens up communication with the province of Hupeh, and part of Shensi. Larger than either of these last two is the contribution of Lake Tungting at Yohchau fú in Húnan, where the combined waters of the rivers Siang, Tsá' and Yuen in that province, swell the already enormous volume of waters flowing from the west. Passing up the main trunk, we now meet the Tsing, the Wu, the Chih-shui, the Ché-hung, the Pa-to and the Ta-chwang coming in on the right bank. On the northern shore are the larger affluents of the Kia-ling, the Loh, the Min, the Yalung and the Wá-liang, all of them in the province of Ss'chuen, and each of them equal to most European rivers. Beyond the last named, the headwaters are useless for navigation, but their perennial supplies from the meltings of Himalayan snows on the eastern slopes of the Bayenkara, give this magnificent artery its title to be called the Son of the Ocean. It is impossible with our present information to give the grand total of miles of navigable waters which are in the basin of the Yangtsz', but it probably exceeds 5,000 linear miles below Patang in Ss'chuen. The area of the basin is computed at 740,000 square miles. The tide is perceived about 400 miles from its mouth. The explorations and charts of Capt. Blakiston of the British army, have made known the character of the main trunk as far as Chungking in Ss'chuen.

The ports now opened to trade are three, Chinkiang, Kiukiang and Hankau. CHINKIANG 鎮江 i.e. Guard of the River, is the chief town of Chinkiang fú, a small prefecture which stretches across the province of Kiangsú to that of Nganhwai, east of Nanking. It is divided into four districts, and the position of the city at the junction of the Canal with the Yangtsz', has always made it one of the most important posts on the river. It was captured by the English troops, July 21st, 1842, and restored the same year; to be again captured by the Taiping insurgents in 1853. The Imperialists retook it in 1857, and found it to be utterly destroyed. It is now in their hands, and some inhabitants are resettling it, but many years of peace must elapse before it can recover the prosperity it enjoyed before 1842. The interruption of the course of the Grand Canal across the country to Tientsin, by the silting of the Yellow River near Hwáingan fú, so that boats no longer cross there, has materially diminished the importance of this city.

KIUKIANG 九江 i.e. Nine Rivers, is the chief town of a prefecture in the northern part of the province of Kiangsi; it is divided into five districts, and includes most of the Poyang lake, reaching west to the borders of Hupeh. The city forms the entrepot of the trade of the province coming through the lake, though Húkau 湖口 at the east end, is the actual embouchure into the river. It was utterly destroyed and abandoned by the Taipings in 1853, but since it has been made a port of entry, the people have returned to it in greater numbers than before, and produce has begun to come to its market from the south and east, as well as along the river.

HANKAU 漢口 i.e. the Han's Mouth, is a suburb of the city of Hanyang 漢陽 in Hupeh, and lies on the northern side of the Yangtze; the river Han runs into the Great River between it and Hanyang fu, while Wúchang 武昌 lies on the southern shore. The three cities form really one great mart, and have usually been known abroad only as Wúchang, the capital of Hupeh. Hankau is the largest of the five *chin* or marts in China, places celebrated for their great trade and manufactures; the other four are Fuhshan near Canton, Siángtan in Hunan, Kingteh in Kiangsi, and Si-ngan in Shensi. The confluence of the Han and Yangtze rivers would naturally be an important spot, and the historical records show that the cities here have always been large and powerful. The Taipings and Imperialists have contested for the possession of Wúchang, and it has been lost and retaken four times since 1853, and suffered dreadfully in each attack. The return of security to the regions watered by the Han, and beyond Hankau up to Yohchau on the Yangtze, will assure the rapid revival of this port, and attract more and more of the trade of the great provinces of Sz'chuen and Shensi. The insecurity of native trade along the Great River has always prevented that interchange of commodities between its widely separated provinces, which would have developed their resources; but with the safety, rapidity and cheapness of steam transportation, will, it is to be hoped, be connected the security and intercourse of its inhabitants throughout these populous regions.

The limits of the port of Hankau are defined, on the south, by a line drawn from the pagoda on the summit of the hill on the Hanyang side to the Hanyang gate of the city of Wúchang, on the opposite bank of the river; and on the north, by a line drawn below the British Concession from its boundary across the river to the custom-house, called by the Chinese, Wúchang. The foreigners have settled in a quarter set apart for themselves by the authorities, and have already erected many dwellings and storehouses.

When the passage to Hankau was declared to be legally opened, a number of provisional regulations for the guidance of British vessels were issued March 9, 1861, by the British authorities, under which the trade was conducted during that year. A new set was issued Dec. 5th, 1861, by the British minister, after further conference with the Chinese officials, aided by the experience of the first year; they were submitted by the Chinese to the French, American, and Russian ministers, by whom they were accepted, and then made applicable to all ships.

REGULATIONS FOR CONDUCTING BRITISH TRADE ON THE
YANGTSE³ RIVER.

I.—It is agreed that British vessels may trade at the ports of Kiukiang and Hankan on the Yang-tse³ River under the following Regulations.—Every British vessel, wishing to proceed up the Yang-tse³ River beyond Chinkiang, must apply to the British consul at Shanghai for a pass, to be called the “river pass,” authorizing the vessel to trade at Kiukiang or Hankau, which will be issued by the Shanghai Customs, and only by the Customs at that port, on the application of the consul, as soon as the Customs are satisfied that all the dues and duties due upon the vessel and her cargo have been paid. The consul will deliver the river-pass to the vessel, and will retain in his hands her register or sailing-letter, and on the return of the vessel to Shanghai, the river-pass must be surrendered to the consul and returned to the Customs.

II.—Every vessel proceeding up or down the river, shall be permitted to carry for her protection, such an amount of arms and ammunition as shall appear to the Customs at Shanghai to be reasonable, and this amount of arms and ammunition shall be entered in a certificate to be called the “arms-certificate,” which shall be delivered by the Customs, through the consul, to any vessel applying for the same; and the said vessel shall be bound to bring back to Shanghai all the arms and ammunition she is thus authorized to carry; or, if she have expended any portion of them during her voyage up or down the river, then to account for the manner in which such portion has been expended. Any vessel returning to Shanghai without any portion of the arms or ammunition stated in her arms-certificate, and being unable to account satisfactorily for such missing portion, or being discovered trafficking in arms, munitions, or implements of war, at any port or place in the river, or carrying any arms or munitions in excess of the amount stated in her arms-certificate, is liable to have her river-pass withdrawn, and to be prohibited from trading upon the river.

III.—The Shanghai Customs may, if they see fit, appoint one or two of their officers to accompany the vessel as far as Chinkiang, and the master of the vessel is bound to receive these officers on board, and to provide them suitable accommodation, but not their food or expenses. Trading at any intermediate port or place between Shanghai and Chinkiang, being an infraction of the XLVIIth article of the Treaty of Tientsin, may be punished as is therein provided.

IV.—No vessel is allowed to pass Chinkiang without anchoring, and being reported to the British consul and the Customs at that port. The master, on arriving at Chinkiang, must deliver to the consul his river-pass, arms-certificate, Shanghai port-clearance, and a list of all passengers and persons, not forming part of the registered crew on board; and, if he wish to proceed up the river immediately, the consul will forward all the papers abovenamed to the Customs, who may board and inspect the vessel; and if the Customs have no claim upon the vessel, or there be no cause for her detention, they will at once grant a new port-clearance, and give this, together with the river-pass and arms-certificate, to the master, who will then be at liberty to continue his voyage. But if the stay of a vessel at Chinkiang exceed twenty-four hours, she must be reported within that time to the British consul, and by the consul to the Customs, in the manner provided in the XXXVIIth article of the Treaty of Tientsin, and a manifest of her cargo and a copy of her passenger list furnished to the consul; and if she land any portion of her cargo, or take on board any cargo, she must do so in the manner provided in the said treaty; and the consul will retain in his possession her river-pass and arms-certificate, until she receives her port-clearance from the custom-house, and is again ready to depart. Any British vessel proceeding up the river above Chinkiang without a river-pass, arms-certificate, and Chinkiang port-clearance, duly obtained as provided in these Regulations, commits an infringement of the XLVIIth article of the Treaty of Tientsin, and is liable to the penalty therein provided.

V.—Every vessel must be reported to the British consul at Kiukiang and Hankan within twenty-four hours after her arrival at either of those ports, and the master must lodge in the hands of the consul the vessel's river-pass, arms-certificate, and Chinkiang port-clearance, and must deliver to the consul a manifest of her inward cargo, and a list of all passengers and persons not forming part of her registered crew on board; and the consul will retain in his possession the river-pass, arms-certificate, and Chinkiang port-clearance, until the vessel is again ready to depart, and until he has received the manifest of her cargo outwards, and a list of all passengers and persons not forming part of her registered crew, and intending to leave the port in the said vessel; and before returning the said papers to the master, the consul will endorse on the Chinkiang port-clearance, the respective dates on which it

was lodged in his hands, and returned to the master. No report, however, need be made in the case of a vessel passing Kiukiang without anchoring, nor is it requisite that a vessel passing that port without discharging or taking in cargo should deliver a manifest to the consul.

VI.—Every vessel coming down the river must anchor at Chinkiang, and be reported to the consul, and cleared by the Customs, in the manner provided in the IVth article of these regulations; and the Customs may, if they see fit, appoint one or two of their officers to accompany the vessel to the port of Shanghai, where the vessel is bound to proceed without touching at any other port or place, and these Customs officers must be received on board, and treated in the manner provided in the IIIrd article of these Regulations.

VII.—The payment of duties due by vessels trading up and down the Yang-tse' under these Regulations, being duly provided for by Articles I, IV, and VI, of the said Regulations, articles XXXVIII, XXXIX, XL, and XLI, of the Treaty of Tientsin, will not apply to any such vessels, and they are accordingly authorized to load or discharge at Hankau or Kiukiang without applying for custom-house permits, or paying duties until their return to Shanghai.

VIII.—The manifests of cargo that are to be delivered to her Majesty's consuls at the various ports, as provided in these Regulations, must be made out in the form of a summary, stating the quantity of each description of goods on board, either in dimensions, weight, or value, as the case may be.

IX.—British trade in oil, hemp, steel, iron, provisions, timber, and copper cash, and the hire and purchase of native vessels, are authorized under the following Rules:—

A.—Oil, hemp, steel, iron, provisions, timber, and copper cash, may be transported under the following conditions:—The shipper shall give notice of the quantity he desires to ship, and of the port of its destination, and shall bind himself by a bond, such shipper being agent of a mercantile firm established in China, or, if not so, by a bond with two sufficient sureties, to the value of the quantity shipped, to return, within three months from the date of shipment, to the collector at the port of shipment, a certificate to be issued by him, with an acknowledgement thereon of the discharge of the cargo specified at the port of destination, subscribed and sealed by the collector at the latter port, or failing the due return of this certificate, to forfeit a sum equal in value to that of the goods shipped; and the vessel concerned will be deprived of the river-pass, and prohibited from further trading on the river.

B.—In the case of native junks chartered or purchased by British subjects to convey produce to or from ports on the Yang-tse'-kiang, the Customs at the port of departure shall, on application of the consul, issue to the party concerned a special junk-pass. But the said party must deposit with the Customs a bond, such party being agent of a mercantile firm established in China, or, if not so, a bond with two sufficient sureties to the value of the vessel and cargo, to return within four months from the date of his bond, to the collector at the port of departure, the junk-pass issued by him, with an acknowledgement thereon, subscribed and sealed by the collector of the port of destination of the arrival of the junk and discharge of her cargo, or failing the due return of this certificate, to forfeit the sum specified in the bond, or deposited with the Customs.

X.—The breach of any of these Regulations may be punished by the withdrawal from a vessel of her river pass, and by prohibiting her from further trading on the river; and if this penalty be awarded when on the river, she may be sent or taken to Shanghai, and also, and in addition to the preceding penalty, by any other pains or penalties that may be incurred by the same offence for a breach of Treaty. And it shall be competent for any of her Majesty's consuls to detain any vessels trading on the river under these Regulations, against which any other complaint or claim may at any time be laid, until the same shall have been heard and determined by the consul, and his judgment carried into execution.

XI.—These regulations may at any time be suspended or annulled, added to or amended, as, and in whatever way, may be judged expedient by her Britannic Majesty's minister plenipotentiary in China and the high Chinese authorities, in communication together.

The trade on this River has developed so much, that further regulations have been issued for its conduct by the Chinese Government, which has shown a desire to facilitate the traffic. These regulations have been issued by the British Minister for the observance of all British vessels, in a notice dated Peking, November 10, 1862, and have since been agreed

to by the other treaty powers, so that they are now applicable to all nations. They define and modify the former series, and meet the exigencies of the trade better than those did, especially with regard to the management of the steamers. The constant effort of the natives to use foreign influence or protection to evade the regulations of their own country, greatly complicates the carrying out of these and similar rules. Both series are inserted to show the changes.

REVISED REGULATIONS OF TRADE ON THE YANGTSE' KIANG.

ART. I. British vessels are authorized to trade on the Yangtsé' Kiang at three ports only; viz: Chinkiang, Kiukiang and Hankau. Shipment or discharge of cargo at any other point on the River is prohibited, and violation of the prohibition renders ship and cargo liable to confiscation. Native produce, when exported from any of these three ports, or foreign imports not covered by exemption certificates, or native produce that has not paid coast-trade duty shall, when imported into any of these three ports, pay duty as at the treaty ports.

ART. II. British merchant vessels trading on the river are to be divided into two classes, namely, *Seagoing vessels*, that is, merchantmen trading for the voyage up the river above Chinkiang, locheas and sailing vessels generally; and *Steamers* running regularly between Shanghai and the river ports.

These two classes of vessels will be dealt with according to Treaty, or the rules affecting the river ports to which they may be trading.

All vessels, to whichever of the two classes they may belong, if about to proceed up the River, must first report to the Customs the arms or other munitions of war they may have on board, and the numbers and quantities of these will be entered by the Customs on the vessel's river-pass. Permission to trade on the river will be withdrawn from any vessel detected carrying arms or munitions of war in excess of those reported to the Customs, and any vessels detected trading in arms or munitions of war will be liable to confiscation.

Any vessel falling in with a revenue cruiser of the Chinese government will, if examination of them be required, produce her papers for inspection.

ART. III. *Sea-going vessels*.—British merchantmen, locheas, and sailing vessels generally, if trading at Chinkiang, will pay their duties and tonnage dues at Chinkiang.

If a vessel of this class is proceeding further than Chinkiang, that is either to Kiukiang or to Hankau, her master must deposit her papers with the consul at Chinkiang, and must hand in her manifest to be examined by the Chinkiang Customs; the superintendent of which, on receipt of an official application from the Consul, will issue a certificate, to be called the *Chinkiang pass*, to the vessel. The Chinkiang pass will have entered upon it the number and quantities of arms, muskets, guns, swords, powder, &c., on board the vessel; also the number of her crew, her tonnage, and the flag she sails under. The Customs will be at liberty to seal her hatches, and to put a Customs' employé on board her. On her arrival at Kiukiang, whether going up or coming down, her master must present her pass to the Customs for inspection.

The duties on cargo landed or shipped at Kiukiang or Hankau, must all be paid in the manner prescribed by the Regulations of whichever of the two ports she may be trading at, and on her return to Chinkiang she must surrender her Chinkiang pass to the Customs at Chinkiang; and the Customs, having ascertained that her duties and dues have been all paid, and that every other condition is satisfied, the grand chop will be issued to the vessel, to enable her to obtain her papers and proceed to sea. The Customs will be at liberty to put an employé on board the vessel to accompany her as far as Langshan.

Any British vessel of this class found above Chinkiang without a Chinkiang pass will be confiscated. Any junk without Chinese papers will similarly be confiscated.

ART. IV. *River steamers*.—Any British steamer trading regularly on the River will deposit her papers at the British Consulate at Shanghai, and the Customs, on application of the British Consul, will issue a special river-pass (or steamer's pass), that shall be valid for the term of six months. Steamers trading on the river under this pass will be enabled to load and discharge, and will pay duties according to the Rule affecting *river steamers*.

On arriving off Chinkiang or Kiukiang, the steamer, whether proceeding up the river or down, will exhibit her pass to the Customs.

The tonnage dues leviable on any steamer holding a river-pass shall be paid alternately at Chinkiang, Kiukiang and Hankau.

The Customs are at liberty to put a tidewater on board a steamer at any of these ports to accompany her up or down stream, as the case may be.

Infringement of river port-regulations will be punished by the infliction of the penalties in force at the ports open by Treaty: for a second offence the steamer's river-pass will also be cancelled, and she will be refused permission to trade thenceforward above Chinkiang.

Any steamer not provided with a river pass, if her master propose proceeding above Chinkiang, will come under the rule affecting *sea-going-vessels*, laid down in Art. III, and will be treated accordingly.

ART. V. *River Steamers' Cargoes*.—1st. Where native produce is shipped at a river port on board a steamer provided with a river-pass, the shipper must pay both export and coast-trade duty before he ships it. If it be for export to a foreign port, this should be stated when the produce arrives at Shanghai, and if it be exported from Shanghai within the three months allowed, the shipper will obtain from the Shanghai Customs a certificate of its re-exportation; on production of which at the river port of shipment, whether Chinkiang, Kiukiang or Hankau, the Customs of that port will issue a drawback for the amount of coast-trade duty paid.

2d. Where import cargo is transhipped on board a river steamer at Shanghai, it must first be cleared of all duties. The transshipment will not be authorized until the Customs are satisfied that the import duties have been paid.

ART. VI. *Native craft, owned or chartered by British merchants*, will pay duty on their cargo at the rates leviable on such cargo under the treaty Tariff. All such craft will further have to be secured by bond in the manner laid down in the Provisional Rules published on the 5th December 1861, and on entry into any port, will pay port dues according to Chinese tariff. If the cargoes of native craft so employed do not agree with their cargo certificate, the amount specified in their bonds will be forfeited to the Chinese government. This provision is only valid until tranquillity is restored along the river.

ART. VII. British vessels of all classes, as well as junks, owned or chartered by British merchants, must apply to the Customs at the port of departure for a cargo certificate (*tsungtan*), which, on the vessel or junk's arrival at the port of destination, must be handed in to the Customs before permission to discharge can be given.

The above Regulations are provisional, and open to revision if necessary.

The trade in the interior of China, according to Rule VII. of the Commercial Regulations, has not yet attained much importance, owing to the hazards attending the transportation of goods, ignorance of the language, rivalry of native dealers, petty exactions of local magistrates, and other disabilities, all of which are likely to interfere with its development. The native merchants can undersell foreign competitors in their own markets, and keep the interior trade in their own hands, and will doubtless continue to rule the supply of produce at the maritime ports, notwithstanding the efforts of foreigners to enter the producing districts. Shanghai is the port where inland passes have been chiefly granted; trials have been made of sending goods from Tientsin to Kalgan or Chang-kiá-kau, and intermediate places, but in neither case with much encouragement.

The following set of regulations was issued in May, 1861, with particular reference to British trade from Shanghai into the interior, but applied by the Chinese authorities to all nations:—

TRANSIT DUTY REGULATIONS.

1. *In the case of Imports*.—Import duties having first been paid, and notice being given at the custom-house of the nature and quantity of the goods, the ship from which they have been landed, and the place inland to which they are bound, with all other necessary particulars, the collector of customs will, on due inspection made, issue a transit duties memo. This must be handed in at the government bank, and half maritime duties being paid, the bank receipt will, on production at the custom-house, be exchanged for a transit duties certificate. This must be produced at the north or south barrier, and the goods will then be allowed to pass into the interior. Should the goods not correspond with the certificate, or should goods arrive at the barriers unprovided with certificates, they will be confiscated.

2. *In the case of Exports.*—On the arrival of the produce at the north or south barrier, notice must be given at the custom-house at Shanghai, and transit duties paid in the manner laid down with regard to imports: the collector of customs will then issue a certificate, which will be exchanged at the barrier for a memorandum, and the goods passed. This memorandum must be handed in when the goods are reported for exportation, as transit duties will be levied on all produce unprovided with these papers before permission is granted to export it.

The whole business being new to both parties, many difficulties arose, as might have been expected, and complaints, on the part of the foreign merchant, against illegal exactions, which in almost every case were found to have arisen from his not having complied with the regulations. The property brought from the interior must be in the name of the foreigner to whom it belongs, and no native property is rightfully covered by these certificates.

Section 10.

PORT OF TANGCHAU OR CHIFU.

THIS port lies on the northern side of the promontory of Shantung. The prefecture of Tangchau 登州 is divided into ten districts, and includes nearly the whole promontory; the city itself lies in the western part of the prefecture, and is the residence of a *tsungping* or brigadier-general, a *tautai* or intendant of circuit, the *chifu* or prefect, and the district magistrate of 蓬萊 Punglái. Tangchau is beautifully situated on the seaside, nearly opposite Miautau I.; the harbor or roadstead is not very safe, and the town has very little maritime trade; the population is estimated at 120,000 inhabitants.

There are several harbors on the north side of the promontory. Chifu or Chífau 之罘 is about 30 miles east of Tangchau, and may be regarded as its port. Wei-hái-wei 威海衛 a military station, lies near the east end of the promontory, protected by the island of Liú-kung-tán; and Kí-shan-so 奇山所 is between the two, near Kung-kung tán. The anchorages on the southern shores have not been carefully examined; Shih-tau 石島 and Lí-tau 利島 are two ports in the district of Wan-tang. The junks from the south often winter at Lí-tau, and the large walled town of Tsing-hai-wei 靖海衛 further westward, is the post of a garrison. The prefect city of Kiau-chau 膠州 lies far to the west, at the head of a deep inlet; and was recently destroyed by insurgents. Its port is Lingshan 靈山, which is accessible only at high tides to small craft.

The foreign trade is carried on at Yen-tai 烟臺 i. e. Smoke Terrace, a village lying near Chifu cape; it contains upwards of 10,000 inhabitants, and is attached to the district of Fuh-shan 福山, whose chief town lies about ten miles inland. The name of Chifu seems to

have been first applied to a range of hills that forms the boundary between Fuh-shan and Wan-tang 文登 districts; an ancient legend states that Chi Hwangti, B.C. 230, ascended it, and erected a pillar and a temple. The village of Chu-ki lies farther inland. The trade of this port is trifling, compared with Tientsin, and there is little prospect of a rapid increase. Beans and bean cake, medicines, ginseng, tobacco, fruit, and a peculiar sort of wild raw silk, and some manufactured silk, are among the exports—the first article more than double in value to all the others.

The surface of the promontory of Shantung is hilly, rising into high mountains in various parts, and the soil demands continual labor from its hardy and turbulent population to supply their wants. Mines of iron, lead, and silver are known to exist, and salt, tea, gypsum, soap-stone, and many kinds of shell and dried fish are enumerated among the products.

Section 11.

PORT OF TIENTSIN.

WHEN the treaties with the four great Western Powers were signed at Tientsin in June, 1858, the Chinese authorities refused to include it among the new ports to be opened to foreign commerce, under the plea that its distance from the sea and the difficulties of access by reason of the Bar, rendered it unsuitable; their real dislike to its being opened probably arose from their fears at the proximity of foreigners to the capital. By the Convention of October, 1860, it was however, included among the open ports, and soon after opened to trade, which has rapidly increased, and promises to draw to itself a large share of the traffic of the northeastern provinces.

The city of Tientsin 天津 i. e. Heaven's Ford, is the capital of the prefecture of Tientsin, and next to Peking the largest town in the province of Chihli. It lies at the junction of the Grand Canal with the Pei-ho 白河 or White River, in lat. $39^{\circ} 10' N.$, long. $117^{\circ} 3' 55'' E.$, distant 28 miles from Taku by land, and 80 from Peking. The prefecture extends from the Pei-ho south and easterly as far as Shantung province along the shores of the Gulf of Pecheli, and contains one chan and six hien districts; the present divisions and names were established in 1782, previous to which Tientsin was merely a wei or cantonment, whose garrison protected the traffic on the Grand Canal. The district of Tientsin hien reaches from the city eastward to the sea.

The entrance of the Pei-ho is obstructed by a bar, on which the water ranges from 18 inches to 14 feet at spring tides; but the channel up to Tientsin enables any vessel to come up that can cross the Bar. The water is surcharged with silt, that is gradually filling up the Gulf, and the appearance of the coast-line indicates that much of the present shore has been only recently rescued from the sea. Ta-ku 大沽, Tung-kú 東沽 and Si-kú 西沽 are villages near the mouth of the river,

Koh-kú 葛沽 and Pang-kú 朋沽, lie a few miles up the stream. The first named is the largest, and draws to it much of the business of those junks whose cargoes are sent up the river in lighters; a custom-house office is established near the town. Two or three foreign pilots cruise off the port, who receive five dollars per foot for taking vessels up to Ta-kú. The river thence to Tientsin is so crooked that sailing vessels do not often undertake the trip.

The city of Tientsin contains about 400,000 inhabitants, of whom rather more than one-half reside within the walls; the largest suburb extends along between the Grand Canal and the northern wall, around to the East gate. Another large suburb also lies on the east side of the Pei-ho opposite the city, extending along the banks down to the salt mounds. Shops and houses also reach from the city to Tsz'-chuh-lin 紫竹林 i. e. Red-bamboo Grove, a distance of two miles, all of them built on embankments raised from five to eight feet above the level; it is said that the whole city and suburbs have been gradually raised in the same manner to protect them from the inundations, which occasionally flow over the plain. The foreign settlement is located at Tsz'-chuh-lin, and no ships go above the custom-house there; the river is much crowded by junks from that up to the bridge of boats, and its channel constantly narrowed by the people throwing offal upon the banks. The country around Tientsin is flat and naked; much of it is uncultivated, owing to the nitrous efflorescence of the soil, and the difficulty of irrigation. The houses of the poor are built of mud plastered on a framework of millet stalks, and are dark and dirty in the extreme.

The superintendent of the trade of Chifu, Niuchwang, and Tientsin resides at the latter port, and has published the following regulations:—

TIENTSIN CUSTOM-HOUSE REGULATIONS.

I. *Ships' Papers.*—Masters must deposit their ship's papers, &c., with their consul, or, if they have no consul, with the Customs.

Vessels anchoring inside the Bar (欄江沙 Lan-kiang-sa) must be reported to the consul within forty-eight hours after arrival; in the case of vessels whose draught of water necessitates their anchoring outside the Bar, the time for lodging the papers, &c., is extended to seventy-two hours.

II. *Discharge Permit.*—The import manifest must contain a true account, with all particulars, of the nature of the cargo on board, and must be handed to the Customs before permission to break bulk can be granted. A permit will thereon be issued for the discharge of the goods specified in the manifest.

III. *Landing of Cargo.*—Upon the issue of the "discharge permit," the articles of merchandise therein specified may be placed in cargo-boats. In the case of vessels anchored at Ta-ku or outside the Bar, the cargo-boats, when laden, must go alongside the Customs' junk at Ta-ku, where their hatches will be sealed and permission given to proceed to Tientsin.

Upon arrival at the customs' jetty at Tsz'-chuh-lin, the consignee of the merchandise on board the cargo-boat must make application for a "customs' memo.," which should, to expedite the clearance of the goods, contain a full account of the nature, marks, and numbers, &c., of the cargo-boat's contents. On the production of the bank receipt for the payment of the duty, the cargo-boat will be permitted to leave the jetty and discharge her cargo.

IV. *Shipment of Cargo.*—Goods intended for exportation must be sent for examination to the Customs' jetty, and must be accompanied by an application (containing a full account of the nature of the merchandise with quantity, marks, and all other necessary particulars,) for a "customs' memo." Upon payment of the export duty, the cargo-boat will be allowed to leave the jetty.

In the case of goods intended for vessels anchored within the inner port limits, a Customs' officer will accompany the cargo-boat. The hatches of cargo-boats conveying export goods to vessels anchored at or off Ta-ku, will be sealed by the Customs at the Tsz'-chuh-lin jetty; upon arrival at Ta-ku, the cargo-boat must go alongside the Customs' junk, where the hatches will be opened and the boat permitted to repair to the ship concerned.

V. *Cargo-boat Limits*.—Until further notice, the lading of export and discharging of import cargo-boats can only take place to the north of the Tsz'-chuh-lin customs' jetty. Any departure from this regulation will render the goods concerned liable to confiscation.

VI. *Transshipment*.—No transshipment can take place without special written permission.

VII. *Drawback and Exemption Certificates*.—Application for drawback and exemption certificates must specify the nature, marks, numbers, &c., of the goods concerned, the ship by which imported, the date of payment of duty, &c.; and the merchandise to be re-exported must be sent to the Customs' jetty for examination, in the same manner as other goods intended for shipment.

VIII. *Export Manifest*.—Upon application for the grand chop, (customs' clearance) the Customs must be furnished with an export manifest.

IX. *Exclusion of Cargo*.—Cargo for which a permit has been issued, but which cannot be received on board, must be brought to the customs' jetty for examination before being relanded.

X. *Anchorage Limits*.—Ships remaining at Ta-ku must anchor below the Customs' junk; the inner port limits are the Tsz'-chuh-lin jetty on the north and Liang-kia-yuen 梁家園 on the south. The discharge or landing of cargo at any place not within the anchorage limits will expose the goods to confiscation.

In consequence of the frequent presentation at the custom-house of exemption certificates, when they did not accompany the goods they purported to cover, the superintendent of customs at Tientsin issued a notice in June 1862, that the regular tariff duty would be levied on all goods unaccompanied at the time by their proper exemption certificate, and a receipt would thereupon be furnished by the Customs which could be presented to the custom-house at the port whence the goods came, there to be accepted as a drawback for the amount, if returned at the same time with the original exemption certificate.

By Art. X. of the Regulations for the overland trade, Russian merchants carrying Chinese produce through Tientsin to Russia, pay at Tientsin the coast-trade duty (half duty) for such produce. Should, therefore, a Russian merchant have already paid on such produce the full and half duty at the port of shipment, he will, if exporting it to Tientsin, receive from the Customs at the port of payment a drawback (*tsun-piau*) for recovery of the half duty.

The chief exports from Tientsin are pulse, fruit, deer's horns, furs, woods, wax, flint-steels, and rhubarb. In the course of a few years, if peace be maintained in the northern provinces, it is probable that their amount and variety will be vastly increased. During the half-year ending Dec. 31, 1861, the total value of the produce exported in foreign bottoms was only 461,573 taels, which was not one-half the value of the import of opium alone, and not one-tenth of the entire import trade; the balance was paid for in specie.

During the year 1862, the value of the import trade was 7,095,811 taels, not including 91,042 taels of re-exports. Of this amount, opium formed 2,520,120 taels, cotton and woolen goods 2,927,602 taels, and sundries 1,648,089 taels. The exports were 407,489 taels, or less than during the previous half-year; the leading articles were, dates, 30,370 taels; medicines, 70,836 taels; tobacco, 40,752 taels; and soap 30,250 taels.

The currency at Tientsin consists of copper cash and paper-money; the latter is usually reckoned at double the rate of the former. Chopped dollars pass current in small amounts at about 7 mace. Gold and silver bullion are easily procured.

By Rule VIII. of the Commercial Regulations, foreign trade is prohibited at Peking. This city is under a separate jurisdiction from that of the province, and octroi duties are levied on everything which comes in through the gates; the effect of this system has been to stifle the enterprise of the citizens, and to increase the importance of Tung-chau, its port on the Pei-ho, twelve miles distant. The opening of the city to general traffic would interfere with this local regulation, and diminish the revenue of its municipal officers, and is probably one reason why the Imperial Commissioners claimed the exemption.

Section 12.

PORT OF NIUCHWANG OR YINGTSZ'.

THE port of Niu-chwang was included in the recent treaties among those to be newly opened to foreign commerce before anything definite was known of its importance, resources, or precise location. It is situated on the eastern bank of the River Lián 濂河, within the district of Hái-ching 海城, one of the subdivisions of Fungtien-fu 奉天府 or the prefecture of Mukten, about 35 miles up the river. The name Niu-chwang 牛莊 i. e. Cattle Farmstead, perhaps indicates what was originally the chief article of its trade; but whatever was its former size or prosperity, it has latterly dwindled away to a few hamlets, so that it is now little more than an official port for the revenue. The river has gradually filled up, too, so that junks cannot reach it; and the traders who resorted there were obliged to take paper money in exchange for their produce; these causes have driven the traffic down the river to Yingtsz' 營子 i. e. the Cantonment, a town lying about five miles from its mouth, or only two miles across the country. The river at this place is called Muh-kau-ying 沒溝營, and disembogues into the Gulf as a large and rapid stream. In approaching the Bar off its mouth, steer N.E. $\frac{1}{2}$ N. for junks at the entrance, until the water shoals to 16 feet at low water. Then steer N.N.E. if the flood is running, but if it is ebb tide, N.N.E. $\frac{1}{2}$ E., until the junks, or west extreme of the outer E. stakes, bear N.E. by E. Then steer that course, and after follow the stakes. Native pilots are procurable, who know the channel better than they do how to manage a ship.

The country around Yingtsz' and Niu-chwang, like that along the Pei-ho, is flat and sparse of trees, but well cultivated and sprinkled over with villages. The people chiefly raise yellow and Barbadoes millet, hemp, wheat, pulse, and indigo; the two last are exported. The dwellings are chiefly constructed of mud, and most of the inhabitants are only able to obtain a bare subsistence. Wood and coal for fuel

are dear. Yingtze contains about 10,000 inhabitants, and is under the jurisdiction of the district magistrate at Hái-ching. The condition of the people in this part of Shingking is wretched, owing partly to the asperity of the winters, but much more to the insecurity of life and property arising from the depredations of armed bands who infest the roads and rivers, and are often in collusion with the officials, who are really too weak to control them. The subjoined notification of T. T. Meadows, the British Consul, issued July 29, 1861, further illustrates this feature of society:—

The undersigned, her Majesty's Consul, has, in conversations with the few British residents at this port, taken opportunities of recommending to them that course of conduct which he has considered most likely to promote and preserve peaceable relations between foreigners and the native population in this consular district.

It was this: to abstain strictly from every kind of aggression or trespass, or even from practical joking with the natives; and, on the other hand, promptly to resist, in so far as they held themselves able, every aggression on the part of Chinese against them. The undersigned now takes this method of more formally recommending to them that course, and of impressing the necessity for its observance on them; and viewing the disastrous result of a recent humane attempt on the part of two British officers to rescue a Chinese woman, who was being ill-treated, the undersigned deems it right to accede to an expressed wish of the Chinese authorities by enjoining H.M.'s subjects to allow no generous or humane impulse to lead them in future to intervene in any Chinese broil or fights, domestic or otherwise.

The existence in this province of mounted highwaymen, who infest the roads in smaller or larger bands, together with the existence at this place of a peculiar organization of the criminal classes of a thronged commercial town and seaport, partly form, and have partly produced a state of things that renders the above course of conduct—one proper everywhere—here peculiarly necessary.

Valuable property is escorted through the country by a class of men who make a profession of the work, and who are practised in the use of the arms which they invariably carry; the natives generally are in the habit of keeping arms, spears, swords, and sometimes fire-arms in their houses; and it is a common practice for a countryman when he leaves his home for a few miles to carry one of these weapons—usually a spear—for self-defence. Englishmen, accustomed as they are to hold themselves ready to defend their own persons and property from attack, cannot reasonably look with disfavor on a population because it encourages a similar habit. The fact, however, that the people here have commonly arms on or near them, and are prepared to use them upon any occasion, will form a cogent reason for rigid abstinence in this part of the Empire from a certain domineering, not to say bullying, course of conduct, justifiable nowhere, but which some foreigners have hitherto found it safe enough to follow among the unarmed and timid population of central China.

On the other hand, there are in every population a certain number of mischievously, if not maliciously, inclined people; and it is certain that if that kind of persons at this port found foreigners disposed, on account of disparity of numbers, tamely to submit to their aggressions, life would soon become unbearable for us. The undersigned is therefore desirous to guard against being supposed to recommend any such tame submission. H.M.'s subjects cannot, indeed, exercise too much care and self-command in restraining their tempers in the face of annoyances, serious enough at times, but which are in nowise intended to be such, and result simply from difference of manners or habits, or from a natural curiosity. But as regards unprovoked and willful aggressions and assaults, clearly such, the undersigned considers that, in the long run, safety lies in a prompt and decided opposition of force to violence.

Masters of British vessels are hereby called on to take special pains to bring home, in so far as may be, to the minds of their crews, the peculiar necessity for good conduct when at this port; and to warn them that the undersigned will deem it his duty to punish with unusual severity every assault, trespass, or aggression committed on the persons or property of the natives.

The trade with Niu-chwang is at present comparatively trifling, but the resources of the vast region beyond it are still unknown. Ginseng, liquorice root, hides, skins, hair, and tallow are enumerated among the exports, in addition to the staples of bean-cake and indigo. Nearly all

the trade is carried on with Shanghai and Swatow. The country people resort to the place in winter, when the ground is frozen, bringing their produce in carts across the open country from places farther than the streams enable them to bring it by boats. In this season, they are unoccupied in farming pursuits, and travel in large companies. The climate is salubrious, the thermometer seldom rising in summer above 85° Fah., and ranging from 5° to 25° F. in winter; dust storms are troublesome in all this region. Coal is plenty, and the better class of houses are built so as to be secure against the winter's cold, warmed by fires in which the fire is constantly supplied.

There is considerable diversity in weights in this region. Oil, melon-seeds, indigo, and valuable produce, are sold by the picul of 91½ catties, but rice and millet by the sack of 320 catties, and pulse by a picul of 300 catties. The currency is like that of Tientsin, but without so much paper money in circulation. A tael of silver exchanges for about 1525 good copper cash, and a dollar passes for 68 candareens to 7 mace.

Section 13.

COLONY OF HONGKONG.

THE island of Hongkong 香港 *i. e.* Fragrant Streams, derives its name from a stream on the western side, where vessels formerly took in their water; foreigners applied the name to the whole island, and natives have given it to the city of Victoria. The island is 26⁹⁰/₁₀₀ miles in circumference, and with the harbor on the north side and islets therein, were ceded to the British crown in 1841. In 1860, the Chinese ceded a part of the mainland on the opposite shore, called the peninsula of Kaulung, 九龍 or Kowloon, *i. e.* Nine Dragons, estimated to contain about four square miles; the land was taken possession of on the 19th January, 1861, and few buildings have yet been erected. The population of the colony consists chiefly of Chinese resorting to it for trade or employment, only a small proportion of whom bring their families, or permanently become British subjects.

There are no port-charges or dues levied on goods or vessels; and ships discharge, tranship, and load their cargoes without the intervention of any officer; or rendering any account of their manifest to the local authorities. The harbour-master takes an account of the arrivals and departures, and exercises jurisdiction over the trading craft in the harbour, according to the following Regulations:—

REGULATIONS OF THE HARBOUR OF HONGKONG.

Whereas it is expedient to revise and amend the Regulations hitherto existing for the maintenance of order within the harbour of Victoria, Hongkong:—Be it enacted and ordained—

I. Ordinance No. 11 of 1845 is hereby repealed, except so far as the same repeals No. 19 of 1844.

II. The harbour Regulations issued on the 30th day of April, 1841, under the hand of Charles Elliot, her Majesty's Plenipotentiary, are hereby revoked.

III. Every master of a merchant vessel shall hoist the ship's number on entering the harbour of Victoria, and shall keep such number flying until the ship shall have been reported at the harbour-master's office.

IV. Every master shall, within twenty-four hours after arrival within the limits of this harbour, report the arrival of the ship at the harbour-master's office, and in the case of a British vessel, or of a vessel which shall not be represented by a consul, shall deposit there the ship's articles, list of passengers, ship's register, and true copy of manifest if required. In the case of a foreign vessel represented by a consul, the said papers shall be lodged by the master at the proper consulate, under a penalty not exceeding two hundred dollars on refusal or neglect of the master so to do.

V. The name of a master, or first or only mate, shall not be attached by the harbour-master to a British ship's register or articles, unless such master or mate shall possess a certificate of service or competency.

VI. No officer, seaman, or other person shall be shipped in this harbour to do duty on board any merchant vessel, except at the shipping office of the harbour-master, under a penalty not exceeding twenty dollars for every offence.

VII. In the event of the death of any of the crew, passengers, or other persons, occurring on board any merchant vessel whilst in the harbour, or in case of the desertion or removal of any of the crew, the master of such vessel shall forthwith report the same in writing to the harbour-master, under a penalty not exceeding twenty-five dollars for every death, desertion, or removal which he shall neglect to report.

VIII. No master of any ship shall discharge, or force therefrom, or wilfully or negligently leave behind him, in this colony, any seaman shipped on board thereof unless on a certificate from the harbour-master or other person appointed to grant the same; and who shall have power to withhold or grant the same as he shall see fit, under a penalty not exceeding twenty-five dollars: and if any seaman shall wilfully or negligently remain in the colony, after the departure of the vessel in which he shall have shipped, without such certificate, such seaman shall, on conviction before the marine magistrate, forfeit and pay a sum not exceeding twenty-five dollars, or be imprisoned for a term not exceeding one month.

IX. Every master of a merchant vessel arriving in the harbour shall take up the berth pointed out by the harbour-master, or by any person sent on board by him for that purpose, and shall moor his ship there properly, and shall not remove from it to take up any other berth without his permission, except in case of necessity, to be decided by the harbour-master, under a penalty not exceeding one hundred dollars: and he shall remove his vessel to any new berth when required so to do by the harbour-master, under a fine not exceeding twenty dollars for every hour that the vessel shall remain in her old berth, after notice to remove under the hand of the harbour-master or his deputy shall have been given on board of her.

X. Every master of a merchant vessel shall immediately strike spars, clear hawse, or shift berth, or obey any other order which the harbour-master may think fit to give, and any master wilfully disobeying or neglecting this regulation, shall be liable to a fine not exceeding two hundred dollars.

XI. Every master about to proceed to sea shall, under a penalty not exceeding fifty dollars, hoist a blue-peter twenty-four hours before time of intended departure, and shall give notice to the harbour-master, who will furnish a port-clearance, and shall likewise attest the manifest if necessary; and any ship, having obtained such clearance and not sailing within thirty-six hours thereafter, shall report to the harbour-master the reason for not going, and shall reposit the ship's papers if required.

XII. Every master of a merchant vessel arriving in this harbour, and having gunpowder on board, weighing in the whole over two hundred pounds, shall make immediate report of the same to the harbour-master, or shall be liable to a penalty not exceeding ten dollars for every hour that he shall neglect to do so; and shall forthwith, on being required so to do by the harbour-master, land or store the same in some convenient place to be approved of by the harbour-master.

XIII. No dead body shall be thrown overboard within the limits of this harbour, under a penalty not exceeding two hundred dollars, to be paid by the master of the vessel; and no stone or other ballast shall be thrown overboard within the said limits under a penalty not exceeding one hundred dollars, to be paid by the master of the vessel from which such stone or ballast shall have been thrown.

XIV. Except as is hereinafter directed under sections XXI. and XXII. of this Ordinance, or under the sanction of the harbour-master, no cannon, gun, or fire-arm of any description shall be discharged within the limits of this harbour from any merchant vessel or boat, under a penalty not exceeding two hundred dollars.

XV. Every licensed boat shall, between the hours of sunset and daylight, carry a lat-

tern in a conspicuous place, with the number of the license cut out on the framing. If the person in charge of any boat shall demand or take more than his fare, or use abusive language to passengers, or neglect to carry a light as required, or refuse without sufficient cause to take a passenger at the fare established, the party offending, or in his absence the person to whom the license for the boat was granted, shall be liable to a penalty not exceeding twenty-five dollars; and all boats, whether private or not, may and shall be subject to be stopped and examined by the police boats; and if the person in charge of any boat does not heave to on being hailed by a police boat, or uses abusive language to the officer or persons on board of her in the execution of their duty, he shall be liable to be detained in custody until he can be brought before a magistrate, and on conviction be liable to a fine not exceeding twenty-five dollars.

XVI. Every commanding officer of any ship-of-war, or master of a merchant ship or vessel of whatsoever nation, who may arrive in this harbour, having small-pox, or any other disease of a contagious or infectious nature on board, shall hoist the proper quarantine flag; and no communication shall be held with any other vessel or boat or with the shore, until permission be given by the harbour-master; and the boarding-officer on nearing such ship shall be informed of the nature of such disease, that proper precautions may be taken and assistance rendered, under a penalty in any of the foregoing cases not exceeding two hundred dollars for every offence.

XVII. Every such commanding officer of a ship-of-war, or master of a merchant vessel, having any such disease on board, shall forthwith remove his ship to any berth which shall be pointed out by the harbour-master, and there remain and keep the quarantine flag flying until a clean bill of health shall be granted by the harbour-master; and shall afford free access and render every assistance to the colonial surgeon or other officer of health who may be directed by his Excellency the Governor to visit such ship, under a penalty not exceeding two hundred dollars for every offence.

XVIII. A public fairway shall be buoyed off for the passage of river and coast steamers, and no vessel or boat of any description shall be allowed to anchor within such fairway, and the master of any vessel or boat dropping anchor in, or otherwise obstructing such fairway, shall be liable for each offence to a fine not exceeding fifty dollars in addition to any fine otherwise leviable under this Ordinance in the case of sea-going vessels, and in the case of boats registered in the colony to a like fine, in addition to the forfeiture of register or license, if it be so adjudged by the marine magistrate.

XIX. Every master of any vessel of whatsoever description, who shall make or cause to be made fast to any of the public buoys or beacons or their moorings, any rope, chain, or other gear, or shall foul or in any way injure the said buoys, beacons, or moorings, shall on conviction thereof be fined a sum not exceeding twenty-five dollars, in addition to the cost of repairing or replacing the same.

XX. Every master of a vessel or hulk in this harbour shall, from sunset to sunrise, cause to be exhibited a bright white light from the starboard foreyard arm; or in the case of dismantled vessels or chops, at the place where it can be best seen, and in default shall incur a penalty not exceeding one hundred dollars.

XXI. In case of fire occurring on board any ship or vessel in the harbour—if *at night*, three lights shall be hoisted in a vertical position at the highest *mast head*, and a single light at the *peak*, and guns shall be fired in quick succession until sufficient assistance shall be rendered; if *during the day*, the ensign union down, with the signal Marryat's code 2,104 "I am on fire," shall be hoisted at the highest *mast head*, and guns fired as above provided for night time.

XXII. If on board any ship or vessel in the harbour, a disturbance or riot shall occur which the master or his officers are unable to quell by the usual process of bringing the offenders before the marine magistrate or a justice of the peace—if *by day*, the ensign union down shall be hoisted at the *peak*, and the signal 3,240, "mutiny on board," shall be hoisted at the highest *mast head*, or wherever practicable under the circumstances; guns may also be fired as in section XXI.; if *by night*, three lights shall be hoisted at the *peak*, and a single light at the *mast head*, and guns may also be fired as before stated.

XXIII. The boundaries, limits, and anchorage of Victoria harbour shall henceforth be defined and taken to be as follows:—

On the east.—A line drawn from the northernmost point of the Island of Hongkong to the north-east boundary of British Kowloon.

On the west.—A line drawn from the westernmost point of Hongkong to the western side of Green Island, continued to western point of Stonecutter's Island, thence to north point of Stonecutter's Island, continued to north-west boundary of British Kowloon.

The harbour shall be divided into two anchorages, viz., the northern and southern.

Northern anchorage shall have for its southern boundary the north extremity of Hong-kong shut in with the southern point of the Kowloon peninsula bearing East by South.

Southern anchorage shall have for its northern boundary, Kellett's Island bearing East by South $\frac{1}{2}$ South.

XXIV. It shall be lawful for the harbour-master to direct and enforce the anchorage of ships in the northern part of the harbour from 1st June to 15th October, and in the southern part of the harbour from 16th October to 31st May in each year; and it shall be lawful for the harbour-master to permit a ship to anchor in the south part of the harbour during the period first above mentioned, or in the north part of the harbour during the period last above mentioned, for the purpose of discharging cargo and for a specified space of time.

XXV. It shall be lawful for his Excellency the Governor from time to time to set apart a special portion of the harbour for the anchorage of ships of war, and within such portion of the harbour no merchant vessels, or native craft, or boats of any description shall be permitted to anchor without the special sanction of the harbour-master in each case obtained.

XXVI. It shall be lawful for the harbour-master to fix from time to time the place of anchorage for river and coasting steamers, and to grant permission to the owners of such steamers to lay down permanent moorings to be by him approved, notwithstanding anything to the contrary contained under sections XXIII. and XXIV. of this Ordinance, but no river or coasting steamer shall drop anchor or moor within the fairway provided under section XVIII. of this Ordinance.

XXVII. Every master of any vessel whatsoever fitting in this harbour for the conveyance of emigrants, whether to be shipped at this or any other port, shall report the same to the harbour-master under a penalty not exceeding five hundred dollars, and the fittings of said vessel shall be subject to the approval of such officer, who is hereby empowered at all reasonable times to go on board and inspect such vessel; and any person who shall in any way impede the harbour-master in the execution of this duty shall also be liable to a penalty not exceeding five hundred dollars.

XXVIII. A copy of this Ordinance shall be delivered to each master of a vessel entering the harbour, and on neglect to return such copy on obtaining clearance, a fee of one dollar shall be payable by the master.

XXIX. Where no penalty is attached by this Ordinance for the breach or infringement of any provision herein contained, the penalty shall be a sum not exceeding twenty-five dollars. All offences against any of the provisions of this Ordinance shall be cognizable by and may be heard and decided before the marine magistrate, who is hereby empowered in all cases to order payment of costs by the defendant; and in default of payment of the penalty and costs awarded, may levy the same by distress and sale of the offender's goods, or may forthwith commit such offender to gaol for any term not exceeding three months. All orders, judgments, and decisions of the marine magistrate shall be subject to the right of appeal given by Ordinance No. 4 of 1858.

XXX. Whenever the marine magistrate shall be incapacitated by absence, illness, or otherwise from the performance of his duties, it shall be lawful for the acting marine magistrate, or any stipendiary magistrate, or any two justices of the peace of the colony, to adjudicate upon all cases and enforce all penalties under this Ordinance.

XXXI. Wherever the word "master" is used in this Ordinance, it shall be deemed to include any person having charge of a ship or vessel or any other craft.

Passed the Legislative Council of Hongkong, this 22d day of January, 1862.

L. D'ALMADA = CASTRO,
Clerk of Councils.

The passenger traffic to California and Australia has from the first centred in Hongkong. The rules issued by the colonial government for the management of this branch of trade have been devised so as to shield as much as possible the ignorant natives from becoming the victims of reckless speculators and designing shippers, who might delude them on board ill-found and unseaworthy vessels, to the imminent hazard of life. The following summary of the regulations now in force contains all that pertains to the passenger traffic:—

REGULATIONS REGARDING CHINESE PASSENGER SHIPS.

EMIGRATION OFFICE, HONGKONG, 26th December, 1860.

Whereas much ignorance prevails in this port as to the law and regulations affecting Chinese passenger ships, leading to perpetual reference by shipmasters and merchants to the Emigration Officer, for information on matters of ordinary detail and standing rule; and whereas the laws and regulations alluded to are contained in various Imperial acts, local ordinances, and proclamations and decisions of the Emigration Commissioners on matters arising out of the working of the system since it came into force—(some of which documents are not easily procurable by the parties interested), it is therefore considered expedient by the Emigration Officer to publish in a condensed form the leading rules in force in this port relating to all private Chinese passenger ships and passengers, and, as far as the provisions of the Imperial act are concerned, to ships chartered by a British government Emigration Agent.

Any vessel clearing with more than 20 Asiatic passengers, on any voyage of more than 7 days' duration, is a "Chinese passenger ship" under the Act.

1.—The ship laid on for passengers, the master will notify the Emigration Officer by letter of the fact, specifying the estimated number of passengers she can carry by surveyor's certificate, her destination, and the name of the licensed passage-broker employed.

Note.—After which, the Emigration Officer will take an early opportunity to inspect the ship.

2.—When the full quantity of passengers' provisions is on board, the master shall notify the Emigration Officer of the fact, who will as soon as possible thereafter go off and inspect them.

Note.—The provisions must be all placed in the 'tween decks or on the upper deck, and not be stowed away in the hold until after inspection.

3.—When the ship is ready to receive the passengers on board, the passage-broker will bring a written notice to that effect from the master, when a time will be fixed for the attendance of the passengers at this office to have their contract passage tickets explained and signed, in the presence of the broker or his deputy.

Note.—This notice must be given at least 24 hours before the passengers appear at this office; and on the same day the master, with two approved sureties, will attend and execute the bond under section Four of the Chinese Passenger Act, 1855, and deposit the following documents:—

- 1.—Government surveyor's certificate of measurement and seaworthiness.
- 2.—Master's certificate relative to Chinese doctor (provided he fails in securing a European surgeon for a reasonable remuneration.)
- 3.—Certificate under the chop-seals of two Chinese apothecary's shops, vouching for competency of doctor.
- 4.—List of provisions and medicines, according to the scale laid down in the Act, signed by the master.
- 5.—Certificate of a resident physician that he has examined the medicines, that they are good, and in accordance with the requirements of the Act.
- 6.—Passenger list in duplicate, with a summary attached, specifying the numbers, respectively, of passengers under the Act, crew, including master and all persons on ship's articles; showing total number of souls on board,—signed by master.

Note.—Chinese cooks, stewards, interpreters, doctor, &c., are invariably passengers berthed and fed with the others, although borne by law on the ship's articles, for purposes of discipline. In future, their names with their rating on board, will appear at the end of the passenger lists, and they will be included in the gross number that the ship can carry, but numerically they will be entered, as heretofore, under the head of "crew" on ship's articles. About four cooks and stewards to every hundred passengers has been the rule.

4.—Either at this time, or after the passengers are collected on board, they must be inspected individually by a resident surgeon, who must also inspect the crew, and give his certificate that none appear, by reason of any bodily or mental disease, unfit to proceed, or likely to endanger the health or safety of other persons about to proceed, in such vessel.

5.—The broker must personally assure himself that every passenger is on board and report to that effect, after which the Emigration Officer will proceed on board, muster and count the passengers, and make a final inspection of the ship. After this is done, and not before, the ship is at liberty to shift her berth, if it is desired—the master mentioning the fact to the harbor-master—who will then deliver to him his emigration papers and port-clearance.

In the fitting up and equipment of Chinese passenger ships, the following general rules will obtain :—

1.—Ships with full complement of passengers shall carry boats according to the following scale, of size and description approved by the Emigration Officer :—

		Boats			Boats
Less than 200 Tons Register,.....	2		From 600 to 1,000 Tons Register,....	5	
From 200 to 400 ".....	3		1,000 " 1,500 ".....	6	
400 " 600 ".....	4		1,500 and upwards ".....	7	

Note.—In every case one boat must be a properly fitted life-boat, and one a long-boat.

2.—Ships must carry at least two life-buoys, slung, prepared for sudden emergencies.

3.—In the absence of a force-pump and hose, reaching fore and aft, a ship must be provided with not less than three dozen buckets, in case of fire.

4.—Every hatchway leading into passengers' quarters must be covered by a well secured house about six feet high, having as much ventilation as is compatible with strength, and being water tight. The hatches are not to be used during the voyage, unless stress of weather demands it.

Note.—When women are carried, they must have a separate hatchway entrance, apart from the males; and the male and female quarters must be divided by a strong bulkhead, with no door or aperture in it. The female quarters must be aft, as also the water closets for their use.

5.—The berths, cooking cabooses, water closets, &c., must be all properly secured; and the master must provide himself with two or three spare rice boilers, as they are brittle, and liable to accident.

6.—In the very important particular of ventilation, the Government Notification No. 51 is republished here, being not generally known :—

GOVERNMENT NOTIFICATION.

It is hereby notified for the information of masters of ships carrying Chinese passengers, and unprovided with the improved appliances usually found in vessels of modern construction, and generally for the information of all interested, that in addition to a windsail for every hatchway, it is required that a constant supply of fresh air be insured to the between decks in bad weather, by fitting, at each end of the space set apart for passengers, two funnels of wood or metal, four in all, with movable heads, in manner following, that is to say,—the body of the air funnel to reach from underneath the lowermost deck overhead to a height of 3 or 4 feet above the uppermost deck, and to pass through holes cut for the purpose in either side of the deck, and made water-tight by a canvas coat or other suitable means.

The attention of the Emigration Officer has been called to the above regulation.

By Order.

W. T. MERCER,
Colonial Secretary.

Colonial Secretary's Office, Victoria, Hongkong, 22d April, 1886.

Note.—This Regulation will be strictly enforced in every vessel crossing the tropics, and no vessel in which any part of the passenger deck is in total darkness, requiring artificial light, consuming oxygen, will be passed by the Emigration Officer as fit to carry passengers.

Other questions affecting Chinese passenger ships, such as length of voyages, regulating supply of provisions, cabin passengers, description and stowage of cargo, stowage of water, &c., &c., and many items of detail, differing in vessels of different tonnage and build, and in those carrying a greater or less number of passengers, can be settled definitely on application to the Emigration Officer at this office.

A. L. INGLIS,
Emigration Officer.

These regulations refer only to the passenger trade, properly so called, of Chinese emigrants who pay their passage; and not to the coolie trade, which is conducted by foreigners to furnish laborers in western countries. This latter business has reproduced some of the bad traits of the African slave trade, and its history is one of the worst in the annals of foreign intercourse with China. The evils which attended the business a few years ago have, in a great measure been removed, and their recurrence guarded against, by the adoption of such precautions and regulations as experience suggested, for warning the ignorant, protecting the simple, and defending the weak; so that now those natives who are willing to emigrate as hired laborers, are better secured against deception in the proposals made to them, and ill usage before they sail.

The practice of poor natives going away in junks to Siam, Singapore, and the Archipelago, as emigrant laborers, has long been followed in the ports of southern China. Capitalists would fit up a junk for passengers, and take them under certain stipulations to have the passage-money refunded when they arrived at their destination, the captain himself being one of the chief owners. On arrival, the men remained on board until the agent had found persons who would pay him for their passage expenses, and take the security of the emigrants to work out this advance according to a well-known scale of deducting a portion of the wages of each man until the claim was liquidated. So far as is known, this system of supplying laborers worked very well on the whole; all the parties spoke the same language, knew each other's habits, and could resist oppression, or enforce fulfillment of contracts, by such means as are adopted by Asiatics. Most of the Chinese who now live in Siam and Malaysia, or the Archipelago, have emigrated in this way, or are the descendants of former adventurers. Almost none of them carried their families with them, and few ever returned to their homes, though the hope of again seeing his native village stimulated each one in his exile.

It was the influence and experience of this well understood system that made it easy, in 1847, to initiate the scheme of introducing Chinese laborers into Peru and Cuba; the natives along the coasts regarded the offers made to them by foreigners, as an opening to settle in countries not very unlike to those they were already somewhat acquainted with, and among a people like the Siamese or Malays. Being utterly ignorant of these new regions, they were liable to be deceived in every way by those whose interests led them to represent the treatment and employments in those distant lands in the fairest colors.

The discovery of gold in California in 1848, stimulated the desire of thousands to try their luck in such a rich country, and multitudes of the poor were willing to hear any proposition that seemed likely to take them there, on the same system of mortgaging their labor to pay for their passage, which was usual with the junks to Siam. The business once commenced, and found to be profitable, as it was to Peru and Cuba, laborers were wanted for other countries; and ships were loaded for Demerara, Trinidad, Martinique, Jamaica, Panama, Brazil, Surinam, Timor, and Cayenne. The periods of service mentioned in the contracts varied from four to eight years, at about the average wages of four dollars per month for each man, with his food and raiment; the kinds of labor required and number of holidays allowed, were stipulated, but no provision was made for returning. The scheme was a reasonable one if it could be carried out with a full acquaintance of all its obligations.

But it can be readily seen how easily even those foreigners could be deceived, who embarked in this trade with the most earnest desire to do justly by the natives, and take only such men as were willing to engage, and who fully understood where they were going. The native brokers they employed to obtain coolies were paid according to the number of laborers they brought to the dépôts; and after the men were engaged, it was the interest of these agents to prevent friends ever hearing of their relatives, and employers ever learning the truth about the manner of their engagement. The ignorance of each other's language facilitated every kind of misunderstanding and deception by the mid-men upon

both parties—the foreigner and the coolie. The name given to the latter by the Cantonese was *chü-tsai* 猪仔 or pigs, by an allusion to their mode of catching and carrying off swine in round baskets. The coolies were sometimes taken away on board ship, under the idea that they had been hired to dig gold in Australia or California. Several successful attempts at mutiny by the disappointed coolies, in which the officers and crews of the ships were killed, led to stringent measures of precaution during the voyage, so that the vessels bore the appearance of convict ships, and no insurance office would take the risk of their voyages.

It is needless to specify the modes of cruelty and cajolery practised on the unfortunate victims of this "colonization scheme," as it was mildly called, from the time they were beguiled on board boats, or into the dépôts, till they were on board ship and under weigh for foreign lands. Free communication by letter or visits was stopped between the coolie and his friends after he entered the dépôt. The competition among the brokers to load their several ships gradually led to the most unscrupulous means to obtain men, until it was deemed unsafe for a native to be abroad in the streets at night; and the kidnapped man was often tortured to force him to sign the contract, and declare his willingness to engage as a laborer. At Canton and Amoy some of the brokers were seized by their countrymen, and crucified with great torture, for acting as agents. The native authorities showed both weakness and apathy in restraining the business, or protecting their subjects, and yet were unwilling to enter into any arrangements for regulating either. The trade was forbidden at Hongkong, but numerous houses were opened at Macao for receiving the coolies, and most of the ships sailed from that port.

In 1859, Governor-general Láu issued some regulations for restraining the evils of the trade, specifying the places at Canton where the laborers were to be hired, and detailing the manner in which every part of the system was to be conducted. The Conventions at Peking in October, 1860, legalized the employment of Chinese who chose to take service in British or French colonies, or elsewhere; and stipulated that regulations should be framed for their protection against deception and wrong. About the same time Congress passed an act, forbidding any American ship to carry Chinese coolies. The British agents opened emigration offices at Hongkong, Canton and Swatau, and easily obtained laborers for the West Indian colonies. Notices had been already freely circulated through the seaboard districts of Kwangtung, warning the people not to listen to the specious representations of others, but to come themselves to the dépôts if they wished to take service, so that the evils previously connected with the brokerage system had already been abated. In October, 1861, a new set of rules to be observed in hiring the laborers, was issued at Canton and Swatau, and are now to be observed by all those who engage them.

RULES

Under which Houses for the reception of Chinese Emigrants to Foreign countries may be opened at the city of Canton :

I.—The applicant for permission to open an Emigration House, shall furnish the Consul of the nation to which he belongs, for the information of H. E. the Governor-general, with written particulars as to his name, nation, and the extent and character of his intended operations.

II.—The applicant will also furnish copies of all rules, of whatever description, under which he proposes to conduct the emigration, or to regulate the business of the Emigration House; as well as of all conditions or terms under which he proposes to engage the emigrants. All such rules must receive the approval of the Governor-general and the Consul, before they can be carried into effect; and any new regulation, or alteration in the old rules, that the person conducting the emigration may at any time think it necessary to adopt, must in the same way be first submitted to, and approved by, the Governor-general and the Consul, before being enforced or acted on. No notice can be issued, or in any manner made public by emigration agents in the city or environs of Canton, without the previous sanction of the Governor-general and the Consul. The person in charge of the Emigration House is to employ such number of servants or watchmen, as may from time to time be found necessary to maintain order during day and night throughout his premises; and every person employed in the Emigration House, whether foreign or Chinese, is to be registered in the manner appointed by the Governor-general.

III.—Copies of all the said rules and regulations, when so approved by the Governor-general and the Consul, as well as of all the conditions or terms under which emigrants are to be engaged, are to be posted in such manner that they can be easily seen and read, at all the entrances to the Emigration House, as well as in the quarters occupied by the emigrants.

IV.—The proprietors of emigrant dépôts shall provide suitable office accommodation within their houses for the inspecting officers appointed by the Governor-general, in the performance of their duties. The Emigration House will be visited daily by the inspecting officers and their assistants. The emigration Agent will at each visit produce before these officers such applicants for emigration as may have presented themselves, and will note in his own register, the name, age, sex, and residence of each applicant, with such other particulars as may be deemed necessary. The inspecting officers will see that each emigrant is provided with a copy of the contract under which it is proposed to engage him, which must be read over and explained to him in their presence, and they will see that all information which may be required is fully afforded to each applicant. They will also inspect the quarters of the emigrants, and see that careful attention is paid to their health, comfort and cleanliness. In the event of the houses or dépôts for emigrants taking in both sexes, the accommodation for females or families is to be separate from that provided for single male emigrants, and to be so arranged as to insure decency, and such privacy as they may reasonably claim. The door of the Emigration House will be opened at sunrise and closed again at sunset; and free egress and ingress, without any let or hindrance whatever, will be allowed to all the emigrants residing in the Emigration House within certain hours on each day, to be approved by the inspecting officers.

V.—In the event of any emigration Agent having to complain of improper conduct, or of any offence on the part of the inmates of his house, he is at liberty to place and keep the offender in confinement until visited by the inspecting officers, who will direct him as to the course to be pursued; but punishment must only be carried out in the dépôt, when the Governor-general sees fit to sanction the same, through the inspectors.

VI.—The inspection of registered applicants for emigration shall take place every afternoon, and the signing of contracts twice during the week, or as often as the inspectors deem necessary. No emigrant shall be called upon to sign his contract until four days shall have elapsed since the date of his registration by the inspecting officers.

VII.—The contracts will be signed in each establishment in the presence of the inspecting officers. The day should be notified by the emigration Agent to the Consul of the nation to which he belongs. Each emigrant, as he is brought up, will be asked by the inspecting officers if he accepts the terms of his contract, and whether he is willing to sign. No contract can be signed at any time by the emigrant, except with his full consent, and after stating his willingness to sign; and before signing, the contract will be read to the emigrant for the last time, in presence of the inspecting officers. The advances stipulated for in the contract shall be paid to the emigrant at the time he signs his contract, and he will not then be allowed to quit the dépôt, except with the special consent of the agent who engages him, and who will be at liberty to cause him to embark on the same day.

VIII.—A list in the annexed form, to be called a "Shipping List," shall be kept in each Emigration House. The emigration Agent will fill in the same as soon as the emigrants have signed their contracts; and the signature of the inspecting officers to the emigrant's contract, and to the "shipping list" at the foot of all the entries made on each shipping day, shall be the warrant of the emigration Agent for the shipment of the said emigrants. As soon as the emigration Agent reports to the inspectors that the ship

Steamers daily pass and repass from Hongkong to Canton and Macao. At present the rates of freight in the former line are nearly as follows:—

RATES OF FREIGHT IN STEAMERS TO CANTON.

Alum, per picul.....	\$0 15	Matting, roll.....	\$0 30
Aniseed oil, $\frac{1}{2}$ picul case.....	0 40	Do., over 10 tons, per ton.....	2 00
Beer, 4 doz. barrel or case.....	0 40	Musical boxes, case.....	2 00
Do., hhd.....	1 25	Muslins, case.....	0 75
Betel nut, picul.....	0 15	Nankeens, case.....	0 30
Bicho-de-mar, picul.....	0 30	Do., bale.....	0 25
Birds' nests, picul.....	1 00	Nutmegs, picul.....	0 75
Blankets, bale.....	0 75	Oil, tub.....	1 00
Do., case.....	2 50	Opium, chest.....	3 00
Brass leaves, box.....	0 35	Pepper, p.cul.....	0 10
Brocades, bale.....	1 00	Pitch, barrel.....	0 50
Do., case.....	1 25	Preserves, box.....	0 15
Butter, cask.....	0 50	Provisions, salt, cask.....	0 50
Cambrics, case.....	0 50	Do., tierce.....	0 65
Camphor, picul.....	0 25	Prussian blue, case.....	0 40
Canvas, bale.....	1 00	Quicksilver, flask $\frac{1}{2}$ picul.....	0 25
Cassia oil, case $\frac{1}{2}$ picul.....	0 50	Do., flask 1 picul.....	0 50
Cassia, case $\frac{1}{2}$ picul.....	0 30	Rattans, picul.....	0 15
Do., over 10 tons, per ton.....	2 00	Rhubarb, picul.....	0 40
Chair, sedan.....	3 00	Rice, picul.....	0 15
Do., bamboo extension.....	1 00	Rosin, barrel.....	0 40
Do., rattan, each.....	0 50	Saltpetre, picul.....	0 40
Do., package of 2.....	0 80	Sandal-wood, picul.....	0 25
China-root, picul.....	0 25	Sapan-wood, picul.....	0 25
China ware, case.....	0 25 a	Seaweed, Japan, picul.....	0 30
Chintz, case.....	0 60	Shark's fins, picul.....	0 35
Cloves, picul.....	0 40	Sheetings, American, bale.....	0 60
Coal, per ton.....	2 50	Silk punjam, case.....	0 50
Cochineal, case or ceroon.....	1 00	Do. raw, case.....	0 75
Do., cask.....	2 00	Do. piece goods, case.....	1 00 a
Copper cash, picul.....	0 20	Do. re-reeled, case 50 b.....	0 40
Do. sheathing & yellow metal, case.....	1 50	Soy, per tub of 1 picul.....	0 75
Do. nails, cask.....	2 00	Steel, picul.....	0 20
Do. do. keg.....	0 50	Sugar, picul.....	0 20
Cotton, Bombay and Bengal, bale.....	0 60	Do. candy, per tub of 50 catties.....	0 15
Do. Shanghai, bale.....	0 50	Tea, chest.....	0 30
Do. half-bale.....	0 35	Do., half-chest.....	0 20
Do. yarn, bale.....	0 75	Do., 10 catties.....	0 10
Do. goods, case 50 pieces.....	0 75	Do., 7 ".....	0 08
Do. do., bale 50 pieces.....	0 60	Do., 5 ".....	0 06
Cigars, case of 10,000.....	1 00	Do., over 10 tons, per ton.....	2 00
Drills, American, bale 15 pieces.....	0 50	Tin, picul.....	0 25
Damasks, case.....	1 25	Do. plates, box.....	0 20
Fans, case.....	0 75	Tobacco, American, box of 100lb.....	0 40
Fire-crackers, box.....	0 05	Do., Chinese, picul box.....	0 50
Do., over 10 tons, per ton.....	2 00	Treasure and precious stones, $\frac{1}{4}$ per cent.....	0 75
Flour, barrel.....	0 40	Trunks, set.....	0 75
Do., half-barrel.....	0 25	Velvet, piece.....	0 05
Furs, casks.....	3 00	Vermilion, box.....	0 20
Ginseng, hhd.....	2 00	Watches and clocks, case.....	2 00
Do., barrel.....	1 00	Wine, quarter cask.....	0 75
Grasscloth, case.....	0 25 a	Do., case of 3 dozen.....	0 50
Glass bangles, case.....	0 50	Do., case of 2 ".....	0 35
Do., beads, box.....	0 35	Do., case of 1 ".....	0 25
Horse or pony.....	10 00	Window-glass, per box of 100 feet.....	0 50
Iron, picul.....	0 20	Woolens:—	
Isinglass, Japan, picul.....	0 60	Broadcloths, bale.....	1 00
Ivory, picul.....	0 75	Camlets, truss.....	0 50
Jeans, American, bale 20 pcs.....	0 50	Do., bale of 4 trusses.....	1 50
Lacquered ware, case.....	0 50 a	Long Kils, truss.....	0 50
Lastings, bale.....	0 75	Spanish Stripes, truss.....	0 50
Lead, picul.....	0 20	Do., bale of 6 trusses.....	2 00
Linen, case.....	0 40		
Marble slabs, per box of 5 slabs.....	0 15	Passage money for Europeans.....	\$5 00
Do. do. 10 ".....	0 25	Meals extra.....	

Deadweight \$0.20 per picul gross weight; chow-chow cargo, \$2 per ton of 40 cubic feet. No single package will be charged less than 25 cts., and it is optional with the agents of the steamers to charge the tariff rate per package or per ton.

The following goods, being contraband, will not be received on board the steamers: gunpowder, shot, cannon, fowling-pieces, rifles, muskets, pistols, and all other munitions and implements of war; also salt and pepper.

The currency of this colony chiefly consists of Mexican dollars and paper-money issued by the local banks, with a small proportion of rupees and English silver and copper coins. Proposals have been made to coin a bronze cash or mill, similar in shape to the Chinese piece, which shall be taken as the tenth part of a cent, and gradually supplant the common cash. The notes of the Hongkong banks are received in Canton and Macao, and other places adjacent, chiefly among those natives who carry on business with the colony.

The rapid prosperity of Hongkong dates from the opening of the gold mines in California and Australia about 1849, when thousands of natives began to emigrate to those countries, and fitted out their ships at this port. The demand for Chinese laborers as builders, diggers, and boatmen, attracted a large floating population. In 1856, the destruction of the Foreign Factories at Canton removed the control of the foreign trade of that port to the colony, and assured to it the direction of the postal, banking and exchange operations of the whole trade with China. The Chinese dealers in every kind of native small wares and ships' stores resorted to it in larger numbers than ever to supply the great increase of shipping, troops and transports that took place in the three or four succeeding years. The amount of shipping entering at Hongkong, and the trade of the port, have both increased more rapidly within those years than ever before, but no statistics are available to indicate the amount or direction.

Section 14.

COLONY OF MACAO.

THE colony of Macao occupies a peninsula forming the southeastern end of the large island of Hiáng-shán, having an open roadstead on the east, and a small secure harbor on the west. The entrance to it is narrow, and the harbor itself cannot easily receive more than twenty ships; larger vessels lie off the Barra Fort, or in the Typa or Roads. The entire area of the Portuguese jurisdiction, from the Barrier, which divides the colony from Chinese territory, to the Typa and out into the Roads, is about twenty square miles, of which the land measures about four square miles.

The town of Macao lies near the south end of the peninsula, reaching across to both shores, and inclosed by a wall on its north side; beyond this wall towards the Barrier are cultivated fields, with the village of Wáng-hiá, 望厦 or Mongha, and several hamlets, occupied chiefly by Chinese. The name Macao is commonly said to be derived from A-ma-ugan 亞媽澳, i. e. the Harbor of Ama, a goddess of the sea wor-

shipped in a temple at Ama-kok; the Chinese now call the place Ngau-mun or O-moon 澳門 *i. e.* the Hidden Harbor. Native Chinese say the name is taken from the rocky point beyond Meeseberg Hill, called Ma-kau shek 馬蛟石, from the mango fish caught there. It formerly belonged to a subdivision of the district of Hiáng-shán called Tsien-shan chái 前山寨; this had been set off from the jurisdiction of the local magistrate, and placed under a *kiun-min-fú* or sub-prefect, living at Casa Branca or Tsienshan, who superintended the trade of Macao, while a *tsao-tang* resided within the city itself.

The time when Europeans first settled in Macao, then a barren and almost uninhabited promontory, is placed at 1537, but their residence was winked at rather than granted by the authorities at Canton. In 1573, the Barrier wall was built; and in 1587, a civil officer appointed to reside in the settlement, whose authority was acknowledged in all things relating to Chinese subjects. Later, an annual groundrent of 500 taels was paid to the Chinese government for the occupation of the peninsula within the northern wall of the city. The relations with the Chinese government were undefined for a long time, and the Portuguese officers in the colony were unable to come to a formal understanding with even the provincial authorities, until 1844, when it was placed on a more satisfactory footing than it had heretofore been by the Convention between Kíying and Gov. Pinto. Portuguese vessels were then permitted to trade with the five open ports, and the authority of the Government was formally extended to the Typa anchorage, where a fort was erected in 1844.

By a decree of Queen Donna Maria, dated Nov. 20th, 1845, the port was declared to be free to the commerce of all nations, excepting of course with the Chinese, whose traffic still existed according to the stipulations made with that government. However, on the 5th of March, 1849, Gov. Amaral issued a proclamation, declaring that, "the Portuguese custom-house having been closed, it cannot possibly be allowed that a foreign custom-house should continue open at this place, and that duties should be any longer there collected on all sorts of goods, provisions, materials, and other commodities, on most of which duties and other export charges had already been paid, the imports of all kinds from the ports of China shall be free from the payment of any duties at Macao after the 12th of March, and no receipt of duties by the hoppo shall be suffered to be made." The Chinese customs officers stationed there were accordingly sent away; the trade with the Chinese honggs rapidly decreased, all the leading merchants moving their establishments to Whampoa, where special inducements were held out by the governor-general for them to settle. The taxes laid on houses and people to make up the expenses of the settlement, of which the Chinese were obliged to pay their share, were also somewhat increased, which tended further to diminish the population. In two or three years, however, the trade of the colony began to revive, and during the insurrectionary troubles in 1854 and 1855 throughout the adjoining prefecture of Kwangchau, it nearly equaled the prosperous times of 1843. Chinese of enterprise and wealth settled in the place, and now the largest part of the commerce is in their hands.

On the 13th of August, 1862, His Excellency Isodoro F. Guimaraes, the Governor-general of the colony, signed a treaty at Tientsin, which he had negotiated with the Chinese commissioners Hang-ki and Tsung-hau; in which its independence from Chinese control was established. The treaty contains fifty-four articles, but as most of them are commercial regulations, similar to those in the other treaties, those only are quoted which specially relate to Portugal, and reference is made to the French and English treaties.

ART. I. Stipulates for constant peace and amity between the high contracting parties and protection to their subjects.

ART. II. Annuls everything which had been done previously "with respect to the relations between Portugal and the empire of China, and between the government of the city of Macao (formerly in the province of Kwangtung) and the Chinese authorities," and makes the present treaty the only valid regulation of these relations.

ART. III. "The Governor-general of Macao, in his capacity of plenipotentiary of his most Faithful Majesty in China, may visit the Court of Peking every year, should important affairs render it necessary. If, hereafter, the government of his Majesty the Emperor of China shall allow the plenipotentiary of any other foreign nation to reside permanently at Peking, besides those who have already their representatives there, the envoy of H. M. F. Majesty may consider such permission as extending to himself, and avail of it should he deem it convenient."

ARTS. IV and V. Same as the 2d and 3d paragraphs of Art. II. of the French treaty.

ART. VI. Provides that official correspondence be sent to the Chinese authorities in the Portuguese language, with a translation into the Chinese; and that both versions of the present treaty be held as equally valid.

ART. VII. Same as Art. III. of the French treaty.

ART. VIII. Stipulates that Portuguese consuls may be appointed at all the open ports, and shall be received and addressed on terms of civility and perfect equality. Consuls and acting consuls shall have the rank of *tautai*, or intendant of circuit; and vice-consuls, consular agents, and interpreters, that of prefect. "These functionaries are to be true agents of the Portuguese government, and not merchants. The Chinese government, however, will make no objection, in case the Portuguese government shall deem it unnecessary to appoint a full consul to any of the ports, and choose to intrust a consul of another nation, for the time being, with the duties of a Portuguese consul at that port."

ART. IX. "His Majesty the King of Portugal, and his Majesty the Emperor of China, desiring to manifest their reciprocal amicable intentions, have expressly agreed as follows:—All the subjects of both states shall always be treated, reciprocally, as friends in any part of the Portuguese or Chinese territories. H. M. the King of Portugal will enjoin upon the governor of Macao to bestow his most earnest coöperation to avoid everything which might, at that place, be prejudicial to the interests of the Chinese Empire.

"His Majesty the Emperor of China may appoint, should he deem it convenient, an agent to reside at Macao, there to treat of commercial affairs, and watch the due observance of the regulations; he must, how-

ever, be either a Manchu or a Chinese of the fourth or fifth rank. His powers are to be equal to those of the consuls of France, England, America, or of those of other nations who reside at Macao and Hong-kong, and there treat of their public affairs, showing their national flags."

ART. X. Enumerates the fourteen open ports in China at which Portuguese subjects may reside with their families and trade.

ART. XI. Same as Art. XIII. of the British treaty.

ART. XII. Contains rules respecting traveling in the interior of China, like Art. VIII. of the French treaty.

ART. XIII. Provides for building houses, &c., like Art. XII. of the British treaty.

ARTS. XIV to XX. These articles severally contain the same regulations as Arts. XIV. to XX. of the British treaty.

ART. XXI. Stipulates that Chinese criminals, seeking refuge in Macao, or on board Portuguese ships lying in its harbor, shall be surrendered, on requisition and proof of their guilt; and likewise such offenders as may take refuge with Portuguese subjects at the open ports. The article is like Art. XXI. of the British treaty.

ART. XXII. Contains mutual obligations on the part of the Chinese and Portuguese authorities to aid in recovery of debts, and arrest of fraudulent debtors.

ART. XXIII. Indicates the rates of tonnage dues; 4 mace per ton on all vessels over 150 tons, and one mace per ton on those less than 150 tons.

ARTS. XXIV and XXV. are like the same articles in the British treaty.

ART. XXVI. is the same as Art. XXVII. in the British treaty.

ART. XXVII. "The captain of a Portuguese ship may, when he deems it convenient, land only a part of his cargo at any of the open ports, paying the duties due on the portion landed."

ART. XXVIII. Provides for the observance of the regulations which may be made respecting the introduction of duty paid goods into the interior, and of those bought in the country, which are to be shipped on the Yangtze River, or on the seaboard. "The custom-house officers who do not comply with the regulations, or who may exact more duties than are due, shall be punished according to the Chinese laws."

ART. XXIX. Is like the second paragraph of the same article in the British treaty.

ART. XXX. In addition to the provisions of the same article in the British treaty, stipulates that the master of a ship must give notice of his arrival as soon as he enters the port, and is liable to a fine for delaying to do so over two days.

ARTS. XXXI to XLIX. These are severally similar in their provisions to those articles in the British treaty, which are numbered with the same numbers.

ART. L. Allows Portuguese national vessels to resort to any port in China; same as Art. LII. of the British treaty.

ART. LI. "No Portuguese merchant or ship is allowed to carry provisions, arms, or ammunition of any kind to rebels or pirates. In case of contravention of this, the ship and her cargo will be liable to confiscation, and the criminals surrendered to the Portuguese government to be tried and punished with the utmost rigor of the law."

ART. LII. "All advantages and immunities which the Chinese government may hereafter concede to any other nation shall enure to the Portuguese government. And on its part, the Portuguese government, when another nation concedes to China any advantages, will show, likewise, its friendship in the best way possible."

ART. LIII. "It being possible, notwithstanding that peace and amity now exist between Portugal and China, that hereafter some question may arise which the two high contracting Parties cannot easily decide by common accord, it is hereby expressly stipulated that in such case, each of the Governments shall invite a minister of any foreign nation having a treaty with China, to decide the question; and that, if these two ministers cannot agree, a third one shall be named by them, with the consent of the two Governments, whose decision shall be definitive."

ART. LIV. Provides for the exchange of ratifications at Tientsin within two years from the date of the signature of the treaty, and stipulates that the treaty shall then be made known to the high authorities of all the provinces.

The following port regulations, now in force, were issued March 12, 1855:—

REGULATIONS OF THE PORT OF MACAO.

1st.—Any vessel nearing the Roads, and wanting a pilot, must have its national flag at the foremast head.

2d.—No notice will be taken at the office of the captain of the port of any damage occurring to vessels coming in or going out when not piloted by the office pilot.

3d.—The captain of the port may not employ any pilot without having previously examined him; and as it is necessary to keep a pilot establishment, vessels coming in or going out without such office pilot may not be exempted from payment of pilotage dues.

4th.—The captain of a vessel, or his agent, shall report his vessel at the captain of the port's office within 24 hours after his arrival, and in default of doing so he shall pay a fine of 100 dollars.

5th.—The captain of a vessel on landing shall present his ship's papers at the office of the captain of the port; where they will remain until his departure.

6.—Vessels cannot enter the Inner Harbor with gunpowder on board. Such gunpowder must be deposited at the Bar Fort, from whence it can be received on going out.

7th.—It is forbidden to throw ballast or rubbish overboard in port, under a penalty of 100 dollars.

8th.—Vessels are not permitted to change their moorings in the river without the permission of the captain of the port.

9th.—Vessels must keep their sheet anchors ready for letting go.

10th.—If any man deserts his vessel, the same must be reported to the captain of the port, who will assist in his apprehension; and if during the stay of the vessel in port the man cannot be found, and should appear after her departure, he shall be arrested (if so required) and delivered to the police authorities.

11th.—It is forbidden to land invalids without the consent of the captain of the port. For contravention of this a fine of 100 dollars will be imposed.

12th.—If the captain of a vessel wishes to send any sick man to the hospital, he must apply to the captain of the port; the vessel being answerable for the expenses.

13th.—The captain of a vessel may not discharge either part or the whole of his crew in Macao, without the permission of the captain of the port.

14.—Vessels coming to in the Roads, with intention of loading or unloading, must report at the office of the captain of the port, as ordained by the 5th Art. The agents will be held answerable for the neglect.

Pilots are sent out to the Roads on application to the harbor-master's office; the charge for pilotage is \$7½ on all vessels that are brought into the Inner Harbor, and the same for taking them out. A ship anchoring off the Bomparte Ft., or the south end of the settlement, is regarded as

within the Harbor. The fee for police rate for each vessel is \$4, and \$1.50 for clearance; these are all the charges laid on shipping.

If a ship wishes to land or take away gunpowder, the captain or agent must do it through the captain of the port; all of it is stored at the magazine in the Barra Fort. The rules about the importation of cannon require that their number and size be reported, and other particulars; but small arms do not come within this regulation.

The number of lorchas has diminished during the last ten years, and there are now less than twenty registered, which ply between the place and islands in its vicinity. Many of them were formerly employed by the Chinese to convoy and protect their junks against the pirates along the coast, but the conduct of their crews led them to be regarded with suspicion by the natives on some parts of the coast. Macao itself has no manufactures or exports, and very little commerce with Portugal. The trade with Manila, Singapore, and other places in the Archipelago, still employs three or four ships, but this is so much mixed up with that under foreign flags, plying in the seas contiguous to China, that it is impossible to give any statement of its value. The opium trade, unhappily, forms a very large proportion of the business of the place; between 500 and 600 chests are landed monthly, about five-sixths of which is carried into the interior. Cassia bark and oil, green and black tea, from Hokshan and adjacent districts, rice, and other native produce from the west coast, are the leading articles of trade. The most valuable part is that with places lying west of it along the coast, and with inland towns accessible by rivers. The Chinese population within the Barrier is about 50,000, and that of all other nations upwards of 5000 persons.

During the last few years the exportation of Chinese coolies to foreign countries from Macao has been large, and in many cases attended with great injustice and oppression on the part of the people, who acted as agents for the shippers. The cruelties connected with the whole business of hiring the coolies led to the issuing of severe regulations by the authorities for the prevention of wrongdoing in carrying on the trade. A synopsis of them is here given from the decrees dated June 5, 1856, and April 30, 1860.

"A superintendent of Chinese emigration, with a well qualified interpreter, both of them paid by the local government, shall have the oversight of this emigration, and assist the Procurador in his examination of each emigrant. Both these officers shall insert the name of every person applying to go, with his age, residence, and occupation, in their respective registers; when these particulars have been taken down, then a copy of the contract of emigration is given to him and fully explained. After keeping this paper at least six days, during which interval he shall be permitted to go home if he likes, but receives nothing from the emigration shipper, unless he remains in the *dépôt*, where he is fed gratis, he can return to the superintendent and declare his acceptance of the terms of the contract. It is then again read to him, and if he adheres to his decision, he there signs it before both the Procurador and superintendent, and receives the advance money, which is entered in the contract. No delay need intervene before embarking, but if the ship is not ready, and the colonist sees reason to change his mind and decline the engagement, he can do so on refunding the advance money and the cost of his food, at

the rate of 100 cash per day and clothing since the date of signature. No person under 25 years of age can sign the contract unless his parents or guardians consent ; these contracts must also first be submitted to the superintendent, who sees that the period of labor is limited to at least eight years, that the colonist has his legal privileges in the country of his sojourn guaranteed to him, and that facilities shall be afforded him there of writing to or sending money to his friends in China.

"The regulations and management of the dépôts must be submitted to the superintendent, who shall see by personal inspection that they are carried out to the wellbeing of the colonist, among other things that the latter has access to his friends during the day, and is well treated at all times ; the same officer shall examine the condition of the ships in which the men are to embark, none of the vessels being allowed to sail after the 31st of March until the monsoon changes.

"The brokers who collect the coolies are required to take out a licence for a year from the Government, and deposit a security of \$200 when it is obtained ; their houses or dépôts are to be always open for the inspection of the Procurador, who is required to visit them officially. A fine of \$100 is levied on the broker if any Chinese be found unwillingly detained in his premises, or if more than 24 hours elapse after one has expressed his willingness to go abroad as a colonist before he is presented at the Procurador's office for examination. If after this examination, he is rejected, or is otherwise disallowed by the shippers, he is to be furnished a passage to his home, and sent out of Macao, under a fine of \$30 from the broker, who is also legally amenable for any act of violence to the coolies, and liable to lose his licence.

"The agents of coolie ships are to furnish the government with all necessary particulars respecting their business, such as the size and furnishing of the ships and their destination, the location of the dépôts and their arrangements, and the provision made for the sick, who should be lodged separately from the rest, the whole company being open to the inspection of the colonial surgeon and the Board of Health. The agents must also see that the contracts have been properly signed at the Procurador's office, and on the evening before embarkation, the superintendent must visit the dépôts, and compare the men who are detailed to leave with their papers, that there be no injustice practiced, and none be sent off surreptitiously. Fines of from \$50 to \$300 can be levied on the agents for violating these rules, according to the demerit of the offense.

"Ships engaged in the trade of carrying coolies are placed under the control of the Captain of the Port, who must carefully examine their equipage and suitability for such service, and is furnished with the estimates of the average lengths of voyages and tables of the supplies of every sort deemed sufficient for each voyage ; every vessel carrying over 20 Chinese passengers comes under these rules, and must carry a doctor and a supply of medicines. The captain of such a vessel taking in coolies must not receive one on board who does not bring his contract properly sealed and authenticated ; and after the ship's complement is filled, he must bind himself (having certain limitations of sickness, weather, &c.) in the penalty of \$100 to deliver the men at the port for which they were shipped, by returning within 18 months the proper certificates of

his arrival there and fulfillment of the conditions of his bond. Passports are likewise required to be issued to each of the colonists, and when the ship reaches her destination, they are presented to the Portuguese consul there with this passport."

Since these regulations have been in force, the evils formerly connected with Chinese emigration have diminished, though not entirely removed. The return of many persons from countries where they have worked out their time of service, has assisted to make the mass of people in the maritime ports of the province of Canton better acquainted with the whole design and conduct of the emigration, and put them on their guard against the wiles formerly practiced to inveigle them into the barracoons.

The data for ascertaining the total number of coolies which have been taken from Macao up to the end of 1862 are very imperfect, and none are available for definitely stating the number leaving previous to 1856. The following table gives the number from 1856 to 1861, with the ports to which they sailed:—

DESTINATION.	1856	1857	1858	1859	1860	1861	Total in 6½ years
Java.....	..	..	5	418	77	..	500
Havana	2,253	6,753	8,295	7,695	3,015	5,598	33,610
Do via Hongkong.....	..	..	617	..	..	..	617
Callao and Timor.....	..	450	300	321	542	2,120	3,733
Demerara, via Hongkong.....	..	..	300	460	..	..	760
Surinam.....	..	..	500	..	..	..	500
Indian Archipelago and Australia...	240	180	16	75	..	..	511
Emigrants each year	2,493	7,283	10,084	8,969	3,634	7,718	40,231

In the years 1856, '57 and '58, besides the three vessels carrying 1377 coolies noted in this table as going via Hongkong, there were taken from that colony, 4991 coolies to Havana, and 292 to Demerara. The custom-house returns of Havana state that 7711 Chinese coolies entered that port up to Aug. 1855; but this furnishes a very imperfect idea of the traffic, for it was during the year 1855, that 6388 coolies left Swatau alone for different foreign countries. Foreign trade of any kind was then altogether illegal at that port, and this particular business was carried on by those who were careless as to means. The number of coolies sent away from Swatau between 1852 and 1858 has been estimated at 40,000 men; besides the 8,000 more who died on Double I. How many vessels were loaded at Amoy, Whampoa, Cumsing-moon, and at places on the coast west of Macao, during the years 1848 to 1860, can only be guessed at. Not a score of ships altogether have loaded with coolies at Shanghai, and none at Ningpo or Fuhchau; so that nearly all the Chinese who have left their country in this manner were natives of Kwangtung and Fuhkien provinces, from districts lying adjacent to the seacoast. The greatest portion have been carried to Havana and Peru; and the total number taken from all parts of China, since 1847, can hardly be less than one hundred and fifty thousand persons, of whom not more than a thousand were women and children. The free emigration during the same period was more than twice this number.

The currency and weights in Macao are now the same as at Canton. When the custom-house was open, there were some differences observed in the weight of the picul as applied to different articles; and also to the exchange between the tael and the dollar in different transactions, but these have all disappeared. Duties were then levied only on imports by charging six per cent. on a fixed valuation, following the same principle that regulated the arrangement of the Chinese tariff. The Chinese Customs also levied a small duty on goods sent into the interior.

Goods exported from Macao to Canton are now regarded by the Chinese custom-house there as coming from abroad, and pay duty as from any other country.

The rates of boat, coolie, and lorch hire in the colony have been regulated by the Government; and a few of their common items are given as a guide, though, like cabmen in western cities, these boat-people generally ask as much as they hope to get.

For landing each passenger 50 cash; baggage, 100 cash.

For landing in the Inner Harbor, 80 to 50 cash.

Hire of tanka boats per day, 25 cents.

Going to ships in the Roads, 50 cents.

Crossing the Inner Harbor, 100 cash.

In very bad weather, these rates are increased 30 per cent.

Boats for landing small amounts of cargo, 50 cents a day.

One-masted boats for landing cargo, \$1; or \$2 per day to go out to the Roads.

Two-masted boats, \$2 a day; or \$3 off to ships in the Roads.

Lorchas to the Typa, \$20 a trip; to Hongkong, \$40; and to Canton, \$60.

Chair coolies by the day, 25 cents, or 50 cash per hour.

Do. if used in the night, 75 cents.

Coolies hired by the day, 20 cents; or half day 10 cents.

Landing a bale of cotton, 2 candareens.

Rice by the bag or picul, 8 cash.

Rattans, metals, &c., 1 candareen per picul.

Sugar, 7 cash per box.

Tea, large chests of 50 catties 1 candareen; half-chests, 5 cash.

Barrel of beer, wine, &c., 1 candareen 5 cash.

Hogsheads, 3 candareens.

These rates are doubled if the distance is as far as from St Antonio Gate to the Cathedral; and tripled from St Antonio to St Lourenço.

Furniture in general is reckoned at one candareen each article, or each coolie is employed at 20 cents a day.

These rates are frequently modified or increased by distance, weather, and urgency.

CHAPTER IV.

FOREIGN COMMERCE WITH JAPAN.

Section 1.

INTERCOURSE WITH JAPAN.

THE seclusion of the Japanese people for more than two centuries, so that only imperfect and rather exaggerated notions of their condition and policy were obtainable in western countries, was one of those features in the history of that race, which every one desired to see altered, and yet no nation was so situated as peaceably to bring it about. Visits, remonstrances, and embassies were alike unsuccessful, though perhaps not wholly futile, in inducing the Government to relax its strictness. At last in 1853, the President of the United States sent an expedition to Japan, under the command of Commodore Perry, to endeavor to come to an understanding with the Court of Yedo respecting the treatment to be given to the crews of American vessels that might be wrecked on the coast, and to ascertain whether it could furnish coal and provisions to a line of steamers, if they should run between China and California. A general trade between the two countries was also proposed by President Fillmore in his letter, which was delivered to the Japanese commissioners at Goriham, a small hamlet south of Uruga, in the Bay of Yedo, on the 14th of July, 1853. The Japanese authorities requested a few months' delay to consider these propositions, and Com. Perry agreed to defer their consultation to the following year. When he returned in Feb. 1854, the Japanese had concluded to accede to the propositions of the President, and appointed four commissioners of high rank, viz., Hayashi, a prince-councillor (*Dai-gaku no kuni*); Ido, prince of Tsus-sima; Izawa, prince of Mimasaki; and Udono, a member of the Board of Revenue, to treat with his envoy. The treaty was signed at Yokohama, a village a few miles south of the town of Kanagawa, but it is called after the largest of the two places. The ratifications were exchanged at Simoda, Feb. 21st, 1855.

It contains twelve articles, which stipulate in general terms that American ships can be supplied with wood, water, provisions, and coal, at Simoda and Hakodadi only; that mariners shipwrecked in Japan shall be well treated and taken to those ports without charge, nor be confined in a harsh way as formerly; that they and other Americans shall be allowed to go into the country a few miles around those two towns; that American vessels shall be permitted to carry on a modified trade through the intervention of Japanese officials; and that an American consul can be appointed to reside at Simoda.

A series of port regulations, in twelve articles, was also drawn up by the parties to the treaty for the management of the trade and intercourse at Simoda, which was henceforth made an imperial city. The Japanese were not at that time willing to permit a general trade between their

own subjects and Americans, but opened a sort of government bazaar at Simoda, where restricted purchases of manufactured ware and produce could be made. The treaty did not contemplate the residence of Americans in the Empire, and when a family came to Simoda in 1855 to reside on shore, the Japanese authorities very properly declined to allow it to settle.

The Treaty of Kanagawa was not a commercial treaty, and its provisions were really preliminary to the subsequent negotiations which resulted in opening foreign commerce with Japan. It was a great step, however, towards that end, and the Japanese entered upon it, only after much deliberation, and then with reluctance. The commissioners described themselves at the time as being in the situation of persons long immured in a dark room, who were suddenly brought out into noonday glare, and required to examine delicate machinery and fine carving.

The town of Simoda which was opened to the American trade by this treaty, is a small seaport in the principality of Idzu, near the southeastern end of Nippon, about 150 miles by sea from Yedo. It was then a poorly built town, containing about 7000 inhabitants, most of whom derived their living from agriculture and fishing. Its harbor affords a secure retreat to the small vessels plying along the coast and up to the capital, and from hence communications are soon sent overland to Yedo. The town lies at the opening of a pretty cultivated valley, through which the Inodzu-gawa flows, a small stream barely sufficient at high tide to float loaded scows a few miles up the valley.

The extraordinary earthquake of Dec. 1854 greatly injured the harbor, and the town was damaged by the ocean swell which rolled in at the same time, and washed over it. The consul-general appointed by the President, Townsend Harris, reached Simoda in August, 1856, and took up his residence, with his secretary, Mr Van Heusken, at Kaki-zaki, a hamlet near the upper end of the harbor, where a temple had been set apart for his residence. Subsequently, after the removal of the trade to Kanagawa, and full experience of the insufficiency and insecurity of this harbor, and its ineligible position, Simoda was closed to foreign traffic in January 1860.

Before Mr Harris' arrival, and soon after the Treaty of Kanagawa had been made known to the world, the commander-in-chief of the British naval forces in the East Indies, Admiral Sir James Stirling, visited Nagasaki in H. M. ship "Winchester," with a small squadron, and entered into negotiation with the Japanese authorities. The *bunyo* and *metsuki* (i. e. the imperial governor and his deputy) of Nagasaki, Mezino Chekfu-no Kami and Nagai Ewan-ocho, were appointed to treat with him; and their deliberations resulted in allowing the British permission to obtain supplies, and refit their ships at Nagasaki and Hakodadi, but not at Simoda. This Convention consisted of seven articles, and granted nothing of importance in addition to the concessions to the Americans. The port of Nagasaki was a much better one for supplying ships than Simoda, and was thus far an advance; but the same restrictions were extended to the British resorting there that were applied to the Dutch. The advantages to the British fleet, during the Crimean war, of thus obtaining access to the market and harbor of Hakodadi, however, were not small.

At Simoda, the trade hardly extended beyond the purchase of a few curiosities by visitors, out of the government stores. Mr Harris was in constant intercourse with the Japanese authorities, and on June 17, 1857, he concluded a convention with them in nine articles, by which further privileges were obtained for the Americans. The principal of them were, the opening of Nagasaki to their vessels to refit; the permanent residence of American citizens at the ports of Simoda and Hakodadi; the equal valuation of American coins with Japanese in all transactions, deducting 8 per cent. for the expense of recoinage; the right of Americans arrested for committing offenses in Japan to be tried and punished by their own consular or other officers; and the right of the consul-general to furnish himself with necessary provisions, &c., directly from the market, and to travel beyond the former limits of seven *ri* from the town of Simoda.

These negotiations led the way to a visit to Yedo by Mr Harris in the spring of 1858, and arranging the articles of a commercial treaty with commissioners in that city; they were all agreed to and made ready in March to fill in the date and add the signatures of the negotiators, when the Japanese requested a few weeks' delay in order to refer their provisions to the princes and the officials at Miako. The Netherlands' commissioner was also then negotiating a treaty of the same tenor, and the Japanese desired to conclude them both about the same time. However, in consequence of the arrival of the U. S. str. "Powhatan" off Kanagawa in July, with the tidings of the negotiations and treaties of Tientsin, the Japanese agreed to conclude the treaty; they all went on board the "Powhatan" on 29th July, 1858, with Mr Harris, and signed the draft already drawn up, without making any alteration. The Netherlands' commissioner, J. H. Donker Curtius, signed his treaty, August 18th, 1858. Lord Elgin, the British plenipotentiary, concluded a third treaty on the 26th of August, 1858. Next, Baron Gros, on behalf of the Emperor of the French, signed a fourth on the 9th of October, 1858. A fifth was concluded by Count Euphemius Poutiatine in the month of August, 1858, on behalf of the Emperor of Russia. Governor Guimaraes of Macao was appointed by the king of Portugal to negotiate a treaty with them, and signed a sixth on the 3d of August, 1860. Lastly, Count Eulenberg, envoy from Prussia, and acting on behalf of the German Zollverein, negotiated and signed a seventh treaty in 1861. They are all based on the treaty drawn up by Mr Harris, though a few unimportant differences may be found on comparison.

These compacts with western nations have opened the Japanese empire to the commerce and influence which its people need for their full development. The ideas which will be introduced, in consequence of this enlarged intercourse, will gradually work out many changes in the Japanese political, social, and religious systems; some of them perhaps to be attended with great distress, loss, and even civil war among the natives, before the nation reaches its highest position as a civilized people. In 1860, an embassy was sent from Yedo to Washington to exchange the ratifications of the treaty of July, 1858; and another went in 1862 to Europe, to visit those powers with whom the Siogoun had made treaties.

Section 2.**TREATY OF PEACE, FRIENDSHIP, AND COMMERCE,
BETWEEN HER MAJESTY AND THE TYCOON OF JAPAN.**

HER Majesty the Queen of the United Kingdom of Great Britain and Ireland, and his Majesty the Tycoon of Japan, being desirous to place the relations between the two countries on a permanent and friendly footing, and to facilitate commercial intercourse between their respective subjects, and having for that purpose resolved to enter into a treaty of peace, amity, and commerce, have named as their plenipotentiaries, that is to say:—

Her Majesty the Queen of Great Britain and Ireland, the right-honourable the Earl of Elgin and Kincardine, a peer of the United Kingdom, and Knight of the most ancient and most noble Order of the Thistle:

And his Majesty the Tycoon of Japan, Midzuo, Tsikfogo no kami; Nagai, Gemba no kami; Inouwe, Sinano no kami; Hori, Oribe no kami; Iwase, Higo no kami; and Isuda Hauzabro.

ART. I.—There shall be perpetual peace and friendship between her Majesty the Queen of the United Kingdom of Great Britain and Ireland, her heirs and successors, and his Majesty the Tycoon of Japan, and between their respective dominions and subjects.

ART. II.—Her Majesty the Queen of Great Britain and Ireland may appoint a diplomatic agent to reside at the city of Yedo, and consuls or consular agents to reside at any or all the ports of Japan which are opened for British commerce by this treaty. The diplomatic agent and consul-general of Great Britain, shall have the right to travel freely to any part of the empire of Japan.

His Majesty the Tycoon of Japan may appoint a diplomatic agent to reside in London, and consuls or consular agents at any or all the ports of Great Britain. The diplomatic agent and consul-general of Japan shall have the right to travel freely to any part of Great Britain.

ART. III.—The ports and towns of Hakodadi, Kanagawa, and Nagasaki shall be opened to British subjects on the first of July, one thousand eight hundred and fifty-nine. In addition to which, the following ports and towns shall be opened to them at the dates hereinafter specified; Ne-e-gata, or if Ne-e-gata be found to be unsuitable as a harbour, another convenient port on the west coast of Nipon, on the first day of January, one thousand eight hundred and sixty. Hiogo on the first day of January, one thousand eight hundred and sixty-three.

In all the foregoing ports and towns British subjects may permanently reside. They shall have the right to lease ground, and purchase the buildings thereon, and may erect dwelling and warehouses; but no fortification, or place of military strength, shall be erected under pretence of building dwelling or warehouses; and to see that this article is observed, the Japanese authorities shall have the right to inspect, from time to time, any buildings which are being erected, altered, or repaired. The place which British subjects shall occupy for their buildings, and the harbor regulations, shall be arranged by the British consul and the

Japanese authorities of each place, and, if they cannot agree, the matter shall be referred to and settled by the British diplomatic agent and the Japanese government. No wall, fence, or gate shall be erected by the Japanese around the place where British subjects reside, or anything done which may prevent a free egress or ingress to the same.

British subjects shall be free to go where they please, within the following limits, at the opened ports of Japan. At Kanagawa, to the river Logo (which empties into the bay of Yedo, between Kawasaki and Sinagawa), and ten *ri* in any other direction. At Hakodadi, ten *ri* in any direction. At Hiogo, ten *ri* in any direction, that of Kioto excepted, which city shall not be approached nearer than ten *ri*. The crews of vessels resorting to Hiogo shall not cross the river Engawa which empties into the bay between Hiogo and Osaka. The distance shall be measured by land from the goyoso, or town-hall, of each of the foregoing ports, the *ri* being equal to four thousand two hundred and seventy-five yards English measure. At Nagasaki, British subjects may go into any part of the Imperial domain in its vicinity. The boundaries of Ne-e-gata, or the place that may be substituted for it, shall be settled by the British diplomatic agent and the Government of Japan.

From the first day of January, one thousand eight hundred and sixty-two, British subjects shall be allowed to reside in the city of Yedo, and from the first day of January, one thousand eight hundred and sixty-three, in the city of Osaka, for the purposes of trade only. In each of these two cities a suitable place, within which they may hire houses, and the distance they may go, shall be arranged by the British diplomatic agent and the Government of Japan.

ART. IV.—All questions in regard to rights, whether of property or person, arising between British subjects in the dominions of his Majesty the Tycoon of Japan, shall be subject to the jurisdiction of the British authorities.

ART. V.—Japanese subjects, who may be guilty of any criminal act towards British subjects, shall be arrested and punished by the Japanese authorities according to the laws of Japan. British subjects who may commit any crime against Japanese subjects, or the subjects or citizens of any other country, shall be tried and punished by the consul, or other public functionary authorized thereto, according to the laws of Great Britain. Justice shall be equitably and impartially administered on both sides.

ART. VI.—A British subject having reason to complain of a Japanese must proceed to the consulate and state his grievance. The consul will inquire into the merits of the case, and do his utmost to arrange it amicably. In like manner, if a Japanese have reason to complain of a British subject, the consul shall no less listen to his complaint, and endeavor to settle it in a friendly manner. If disputes take place of such a nature that the consul cannot arrange them amicably, then he shall request the assistance of the Japanese authorities, that they may together examine into the merits of the case, and decide it equitably.

ART. VII.—Should any Japanese subject fail to discharge debts incurred to a British subject, or should he fraudulently abscond, the Japanese authorities will do their utmost to bring him to justice, and to enforce recovery of the debts; and should any British subject fraudu-

lently abscond or fail to discharge debts incurred by him to a Japanese subject, the British authorities will, in like manner, do their utmost to bring him to justice, and to enforce recovery of the debts. Neither the British nor Japanese governments are to be held responsible for the payment of any debts contracted by British or Japanese subjects.

ART. VIII.—The Japanese government will place no restrictions whatever upon the employment, by British subjects, of Japanese in any lawful capacity.

ART. IX.—British subjects in Japan shall be allowed the free exercise of their religion, and for this purpose shall have the right to erect suitable places of worship.

ART. X.—All foreign coin shall be current in Japan, and shall pass for its corresponding weight in Japanese coin of the same description. British and Japanese subjects may freely use foreign or Japanese coin, in making payments to each other. As some time will elapse before the Japanese will become acquainted with the value of foreign coin, the Japanese government will, for the period of one year after the opening of each port, furnish British subjects with Japanese coin in exchange for theirs, equal weights being given, and no discount taken for re-coinage. Coins of all description (with the exception of Japanese copper coin), as well as foreign gold and silver uncoined, may be exported from Japan.

ART. XI.—Supplies for the use of the British navy may be landed at Kanagawa, Hakodadi, and Nagasaki, and stored in warehouses, in the custody of an officer of the British government, without the payment of any duty; but if any such supplies are sold in Japan, the purchaser shall pay the proper duty to the Japanese authorities.

ART. XII.—If any British vessel be at any time wrecked or stranded on the coast of Japan, or be compelled to take refuge in any port within the dominions of the Tycoon of Japan, the Japanese authorities, on being apprised of the fact, shall immediately render all the assistance in their power; the persons on board shall receive friendly treatment, and be furnished, if necessary, with the means of conveyance to the nearest consular station.

ART. XIII.—Any British merchant-vessel arriving off one of the open ports of Japan, shall be at liberty to hire a pilot to take her into port. In like manner, after she has discharged all legal dues and duties, and is ready to take her departure, she shall be allowed to hire a pilot to conduct her out of port.

ART. XIV.—At each of the ports open to trade, British subjects shall be at full liberty to import from their own or any other ports, and sell there, and purchase therein, and export to their own or any other ports, all manner of merchandize, not contraband, paying the duties thereon, as laid down in the tariff annexed to the present treaty, and no other charges whatsoever.

With the exception of munitions of war, which shall only be sold to the Japanese government and foreigners, they may freely buy from Japanese, and sell to them, any articles that either may have for sale, without the intervention of any Japanese officers in such purchase or sale, or in making or receiving payment for the same; and all classes of Japanese may purchase, sell, keep, or use any articles sold to them by British subjects.

ART. XV.—If the Japanese custom-house officers are dissatisfied with the value placed on any goods by the owner, they may place a value thereon, and offer to take the goods at that valuation. If the owner refuses to accept the offer, he shall pay duty on such valuation. If the offer be accepted by the owner, the purchase-money shall be paid to him without delay, and without any abatement or discount.

ART. XVI.—All goods imported into Japan by British subjects, and which have paid the duty fixed by this treaty, may be transported by the Japanese into any part of the empire without the payment of any tax, excise, or transit duty whatever.

ART. XVII.—British merchants who may have imported merchandise into any open port in Japan, and paid duty thereon, shall be entitled, on obtaining from the Japanese custom-house authorities a certificate, stating that such payment has been made, to re-export the same, and land it in any other of the open ports without the payment of any additional duty whatever.

ART. XVIII.—The Japanese authorities at each port will adopt the means that they may judge most proper for the prevention of fraud or smuggling.

ART. XIX.—All penalties enforced, or confiscations made under this treaty, shall belong to, and be appropriated by, the government of his Majesty the Tycoon of Japan.

ART. XX.—The articles for the regulation of trade which are appended to this treaty, shall be considered as forming part of the same, and shall be equally binding on both the contracting parties to this treaty, and on their subjects.

The diplomatic agent of Great Britain, in conjunction with such person or persons as may be appointed for that purpose by the Japanese government, shall have power to make such rules as may be required to carry into full and complete effect the provisions of this treaty, and the provisions of the articles regulating trade appended thereto.

ART. XXI.—This treaty being written in the English, Japanese, and Dutch languages, and all the versions having the same meaning and intention, the Dutch version shall be considered the original; but it is understood that all official communications addressed by the diplomatic and consular agents of her Majesty the Queen of Great Britain to the Japanese authorities, shall henceforward be written in English. In order, however, to facilitate the transaction of business, they will, for a period of five years from the signature of this treaty, be accompanied by a Dutch or Japanese version.

ART. XXII.—It is agreed that either of the high contracting parties to this treaty, on giving one year's previous notice to the other, may demand a revision thereof, on or after the first of July, one thousand eight hundred and seventy-two, with a view to the insertion therein of such amendments as experience shall prove to be desirable.

ART. XXIII.—It is hereby expressly stipulated that the British government and its subjects will be allowed free and equal participation in all privileges and advantages, that may have been, or may be hereafter, granted by his Majesty the Tycoon of Japan to the government or subjects of any other nation.

ART. XXIV.—The ratification of this treaty, under the hand of her

Majesty the Queen of Great Britain and Ireland, and under the name and seal of his Majesty the Tycoon of Japan, respectively, shall be exchanged at Yedo, within a year from this day of signature.

In token whereof, the respective plenipotentiaries have signed and sealed this treaty. Done at Yedo, this twenty-sixth day of August, one thousand eight hundred and fifty-eight, corresponding to the Japanese date the eighteenth day of the seventh month of the fifth year of Ansei Tsutsi no uye'mma.

ELGIN AND KINCARDINE.
MIDZUO, TSIKFOGO NO KAMI.
NAGAI, GEMBA NO KAMI,
INOUEY, SINANO NO KAMI.
HORI, ORIBE NO KAMI.
IWASE, HIGO NO KAMI.
ISUDA HAUZABRO.

REGULATIONS UNDER WHICH BRITISH TRADE IS TO BE
CONDUCTED IN JAPAN.

REGULATION I.

WITHIN forty-eight hours (Sundays excepted) after the arrival of a British ship in a Japanese port, the captain or commander shall exhibit to the Japanese custom-house authorities the receipt of the British consul, showing that he has deposited all the ship's bills of lading, &c., at the British consulate; and he shall then make an entry of his ship, by giving a written paper, stating the name of the ship, and the name of the port from which she comes, her tonnage, the name of the captain or commander, the names of her passengers (if any), and the number of her crew, which paper shall be certified by the captain or commander to be a true statement, and shall be signed by him; he shall, at the same time, deposit a written manifest of his cargo, setting forth the marks and numbers of the packages and their contents, as they are described in his bills of lading, with the names of the person or persons to whom they are consigned. A list of the stores of the ship shall be added to the manifest. The captain or commander shall certify the manifest to be a true account of all the cargo and stores on board the ship, and shall sign his name to the same. If any error is discovered in the manifest, it may be corrected within twenty-four hours (Sundays excepted), without the payment of any fee, but for any alteration or post-entry to the manifest made after that time, a fee of fifteen dollars shall be paid. All goods not entered on the manifest shall pay double duties on being landed.

Any captain or commander that shall neglect to enter his vessel at the Japanese custom-house within the time prescribed by this regulation, shall pay a penalty of sixty dollars for each day that he shall so neglect to enter his ship.

REGULATION II.

The Japanese Government shall have the right to place custom-house officers on board of any ship in their ports (men-of-war excepted). All custom-house officers shall be treated with civility, and such reasonable accommodation shall be allotted to them as the ship affords.

No goods shall be unladen from any ship between the hours of sunset and sunrise, except by special permission of the custom-house authorities; and the hatches, and all other places of entrance into that part of the ship where the cargo is stowed, may be secured by Japanese officers between the hours of sunset and sunrise, by fixing seals, locks, or other fastenings; and if any person shall, without due permission, open any entrance that has been so secured, or shall break or remove any seal, lock, or other fastening that has been affixed by the Japanese custom-house officers, every person so offending shall pay a fine of sixty dollars for each offence.

Any goods that shall be discharged, or attempted to be discharged, from any ship, without having been duly entered at the Japanese custom-house as hereinafter provided, shall be liable to seizure and confiscation. Packages of goods made up with an intent to defraud the revenue of Japan, by concealing therein articles of value which are not set forth in the invoice, shall be forfeited. If any British ship shall smuggle, or attempt to smuggle, goods in any of the non-opened harbors of Japan, all such goods shall be forfeited to the Japanese government, and the ship shall pay a fine of one thousand dollars for each offence.

Vessels needing repairs may land their cargo for that purpose, without the payment of duty. All goods so landed shall remain in charge of the Japanese authorities, and all just charges for storage, labor, and supervision shall be paid thereon. But if any portion of such cargo be sold, the regular duties shall be paid on the portion so disposed of.

Cargo may be transhipped to another vessel in the same harbor without payment of duty, but all transshipments shall be made under the supervision of Japanese officers, and after satisfactory proof has been given to the custom-house authorities of the *bond fide* nature of the transaction, and also under a permit to be granted for that purpose by such authorities.

The importation of opium being prohibited, any British vessel coming to Japan for the purposes of trade, and having more than three cattie. weight of opium on board, the surplus quantity may be seized and destroyed by the Japanese authorities; and any person or persons smuggling, or attempting to smuggle opium, shall be liable to pay a fine of fifteen dollars for each catty of opium so smuggled or attempted to be smuggled.

REGULATION III.

The owner or consignee of any goods who desires to land them, shall make an entry of the same at the Japanese custom-house. The entry shall be in writing, and shall set forth the name of the person making the entry, and the name of the ship in which the goods were imported, and the marks, numbers, packages, and the contents thereof, with the value of each package extended separately in one amount, and at the bottom of the entry shall be placed the aggregate value of all the goods contained in the entry. On each entry, the owner or consignee shall certify in writing that the entry then presented exhibits the actual cost of the goods, and that nothing has been concealed whereby the Customs of Japan would be defrauded; and the owner or consignee shall sign his name to such certificate. The original invoice or invoices of the goods so entered shall be presented to the custom-house authorities, and shall remain in their possession until they have examined the goods contained in the entry.

The Japanese officers may examine any or all the packages so entered, and for this purpose may take them to the custom-house; but such examination shall be without expense to the importer or injury to the goods; and, after examination, the Japanese shall restore the goods to their original condition in the packages (so far as may be practicable); and such examination shall be made without any unreasonable delay.

If any owner or importer discovers that his goods have been damaged on the voyage of importation before such goods have been delivered to him, he may notify the custom-house authorities of such damage, and he may have the damaged goods appraised by two or more competent and disinterested persons, who, after the due examination, shall make a certificate, setting forth the amount per cent. of damage on each separate package, describing it by its mark and number, which certificate shall be signed by the appraisers, in presence of the custom-house authorities, and the importer may attach the certificate to his entry, and make a corresponding deduction from it. But this shall not prevent the custom-house authorities from appraising the goods in the manner provided in Article XV. of the Treaty to which these Regulations are appended. After the duties have been paid, the owner shall receive a permit, authorizing the delivery to him of the goods, whether the same are at the custom-house or on shipboard.

All goods intended to be exported shall be entered at the Japanese custom-house before they are placed on shipboard. The entry shall be in writing, and shall state the name of the ship by which the goods are to be exported, with the marks and number of the packages, and the quantity, description, and value of their contents. The exporter shall certify, in writing, that the entry is a true account of all goods contained therein, and shall sign his name thereto.

Any goods that are put on board of a ship for exportation before they have been entered at the custom-house, and all packages which contain prohibited articles, shall be forfeited to the Japanese government. No entry at the custom-house shall be required for supplies for the use of the ships, their crews and passengers, nor for the clothing, &c., of passengers.

REGULATION IV.

Ships wishing to clear shall give twenty-four hours' notice at the custom-house, and at the end of that time they shall be entitled to their clearance; but if it be refused, the custom-house authorities shall immediately inform the captain or consignee of the ship of the reasons why the clearance is refused; and they shall also give the same notice to the British consul.

British ships of war shall not be required to enter or clear at the custom-house, nor shall they be visited by Japanese custom-house or police officers. Steamers conveying the mails from Great Britain may enter and clear on the same day, and they shall not be required to make a manifest, except for such passengers and goods as are to be landed in Japan. But such steamers shall, in all cases, enter and clear at the custom-house.

Whale-ships touching for supplies, or ships in distress, shall not be required to make a manifest of their cargo; but if they subsequently wish to trade, they shall then deposit a manifest, as required in Regulation I. The word *ship*, wherever it occurs in these Regulations, or in the Treaty to which they are attached, is to be held as meaning ship, barque, brig, schooner, sloop, or steamer.

REGULATION V.

Any person signing a false declaration or certificate, with the intent to defraud the revenue of Japan, shall pay a fine of one hundred and twenty-five dollars for each offense.

REGULATION VI.

No tonnage duties shall be levied on British ships in the ports of Japan, but the following fees shall be paid to the Japanese custom-house authorities:—For the entry of a ship, fifteen dollars. For the clearance of a ship, seven dollars. For each permit, one dollar and a half. For each bill of health, one dollar and a half. For any other document, one dollar and a-half.

REGULATION VII.

Duties shall be paid to the Japanese government on all goods landed in the country, according to the following Tariff:—

Class 1. All articles in this class shall be free of duty:—Gold and silver, coined or uncoined. Wearing apparel in actual use. Household furniture and printed books, not intended for sale, but the property of persons who come to reside in Japan.

Class 2. A duty of five per cent. shall be paid on the following articles:—All articles used for the purpose of building, rigging, repairing, or fitting out of ships. Whaling gear of all kinds. Salted provisions of all kinds. Bread and breadstuffs, living animals of all kinds, coals, timber for building houses, rice, paddy, steam-machinery, zinc, lead, tin, raw silk, cotton and woolen manufactured goods.

Class 3. A duty of thirty-five per cent. shall be paid on all intoxicating liquors, whether prepared by distillation, fermentation, or in any other manner.

Class 4. All goods not included in any of the preceding classes shall pay a duty of twenty per cent.

All articles of Japanese production, which are exported as cargo, shall pay a duty of five per cent., with the exception of gold and silver coin, and copper in bars.

Rice and wheat, the produce of Japan, shall not be exported from Japan as cargo, but all British subjects resident in Japan, and British ships for their crews and passengers, shall be furnished with sufficient supplies of the same. Foreign grain, brought into any open port of Japan in a British ship, if no part thereof has been landed, may be re-exported without hindrance.

The Japanese government will sell, from time to time, at public auction, any surplus quantity of copper that may be produced.

Five years after the opening of Kanagawa, the import and export duties shall be subject to revision, if either the British or Japanese government desires it.

ELGIN AND KINCAIDINE.
MIDZUO, TISKFOGO NO KAMI.
NAGAI, GENBA NO KAMI.
INOUE, SINANO MO KAMI.
HORI, ORIBE NO KAMI.
IWASE, HIGO NO KAMI.
ISUDA HAUZABRO.

Since the treaties of 1858 went into effect, and foreign merchants have settled at Yokohama in large numbers, the intercourse between them and the natives has not been very harmonious. The whole system of Japanese government and society is at variance with the habits and views of western nations; and the reckless disregard of life among these islanders, whenever they wish to gratify their revenge or their cupidity, is a feature which could not fail to excite fear of collisions. The feelings of the retainers of the feudal princes are enlisted in all the quarrels of their masters, whose commands would often be obeyed even against the Government; so that when questions like those connected with foreign trade and the appropriation of its revenue, or the rights of extritoriality, came up, between these princes and the central power, or between the latter and foreign officials, disputes of a serious nature were likely to arise. Nor have the Japanese the placability even of the Chinese, in respect of harsh treatment, but brood over a real or fancied insult until they can find means and place to revenge it. These and other causes are calculated to complicate the fulfillment of the provisions of these treaties, and call for the utmost forbearance and prudence on the part of foreign officials invested with the difficult duties of harmonizing such conflicting powers, and reconciling their own almost incompatible duties of maintaining the treaty rights of their countrymen in a land whose rulers have only a modified control over their subjects, and an ill-defined idea of their powers. In truth, the questions that arise, both in Japan and China, out of the privileges and demands of the principle of extritoriality, which have been admitted into the treaties with those countries, are likely to result in destroying both their nationalities, or else the stronger and foreign power must constantly be engaged in efforts to protect the subjects of one party against the other. It is like the egg which the ichneumon fly deposits in the caterpillar, on whose body its young is to feed. An *imperium in imperio* to such an extent as is involved in this obligation, ultimately proves fatal, sooner or later, to the independence of the weaker party.

In November, 1861, the British Minister issued a notice to all British subjects in Japan, respecting certain points to be attended to while living in the country; and as it somewhat illustrates the points here alluded to, by indicating the precautions necessary in dealing with the Japanese, its regulations are inserted.

1.—That British subjects shall not ride or drive on any public road or highway in Japan in such a furious or careless manner as to endanger the persons being in any such public road or highway, nor ride or drive in any street of any town or village at a pace beyond that of a walk.

2.—That all British subjects, in passing along roads and streets in Japan, shall, whether walking, riding or driving, observe the following rules of the road: that is to say, in meeting any person, cortège, procession or vehicle, they shall take and keep the left hand side of the road, and on overtaking and wishing to pass on before any such persons, cortège, procession, or vehicle, they shall leave the left hand side, and if practicable without collision, but not otherwise, they shall pass on the right side of the road.

3.—That the discharge of firearms, whether by night or day, in any place in Japan, except in such places and within such limits as shall be designated for the purpose by the Japanese authorities in concurrence with her Majesty's consul, is hereby prohibited.

4.—That no British subject shall go out in pursuit of game within the limits of the port of Kanagawa absolutely, or at any port or other place, save under the authority and sanction of the consul in writing.

5.—That no British subject shall go into any private house or private grounds without the invitation or leave of the owners, or without authority into any battery, arsenal or other establishment of any Japanese not ordinarily open to the public.

6.—That no British subject shall, on any pretence, assault or offer any violence to any Japanese official or functionary, or to any person acting in his aid or assistance.

7.—That no British subject shall persist in any act of violence or outrage after he shall have been warned to desist therefrom; or in case any such British subject shall refuse or neglect, immediately on being charged with the commission of any offence, to deliver a card bearing the stamp and seal of Her Majesty's consul showing his identity, he shall be liable to arrest by any Japanese official duly empowered according to the Japanese law, and by a consul's warrant or licence.

8.—That no British subjects shall, in excursions within the limits assigned to each port, take up their residence in the towns or villages; nor, without express permission granted in writing by the consul, sleep during a night at any place or places away from the foreign location at the port where they are domiciled.

9.—That every British subject, who shall act contrary to any or either of the Rules and Regulations aforesaid, shall be liable for each and every offence to pay a fine of \$200, or to be imprisoned for one month.

10.—That no British subject shall permit any Chinese in his employ to ride anywhere in Japan, except in immediate personal attendance on his master in travelling for a lengthened journey, and then not within a town or village; and that in case any such Chinese shall so ride with the permission of his master, the master shall be liable to pay a fine for every such offence of \$200, or to be imprisoned.

Given under my hand and seal of office at Yedo, within the dominions of the Tycoon of Japan, on the 19th day of November, 1861.

RUTHERFORD ALCOCK.

Section 3.

PORTS OPEN TO FOREIGN COMMERCE.

NAGASAKI.

THE fine harbor of this port early attracted the vessels from the neighboring continent, and the Portuguese and other European traders resorted to it from their first arrival in the country. The port of Firando or Hirado, on the island north of it, was the chief competitor in the west of Japan for the foreign commerce, which in those days was eagerly desired by all classes. When the restriction of foreigners from access to the country at large was decided on by the Court of Yedo about 1640, Nagasaki was selected as the port where the Dutch and Chinese were henceforth to carry on their trade. It once belonged to the principality of Hizen, but was placed under the direct control of officers sent from Yedo, whose jurisdiction extended a few miles around the city. The town is called in Chinese Chang-ki 長崎 *i. e.* Long Cape, and the native name has the same meaning; it is sometimes pronounced Nanga-sa-ki. It is beautifully situated at the head of the harbor, on a hill-slope, and environed by terraced or wooded hills; two rivulets run through the town, whose streets are regularly built, clean, and well paved. The population is now nearly 70,000, and about 20,000 more live under its local authorities within the limits. The artificial islet of Desima (出島 *i. e.* Projecting Isle) to which the Dutch traders were then restricted, measures 600 feet by 240 feet across; it lies off the lower part of the town, in full view of the harbor down to its entrance.

Beyond it, to the westward, are now found the residences of other foreigners, pleasantly situated on the beach or along the hill-sides. Some of the temples which surmount the hills back of the city have also been hired out for the accommodation of residents. The feelings of the people of Nagasaki and its environs are more friendly towards foreigners than is the case at the eastward; they derive many advantages over former days of monopoly from present increased freedom and trade; and are not, apparently, quite so much under the surveillance of government officials as the natives around Yokohama. A few of the native merchants can read and write the Dutch language, and many others can speak it idiomatically.

The regulations of the custom-house and anchorage are furnished to vessels in the harbor. The consular regulations issued in May, 1860, for the guidance of British ships, includes some of the rules issued by the Japanese for the observance of all foreigners living at the port.

REGULATIONS FOR BRITISH SUBJECTS AT NAGASAKI.

I.—The harbour of Nagasaki extends from the town to the island of Papenberg.

II.—Information as to the limits of the anchorage within which cargo may be discharged and shipped will be obtained at the consulate office. Cargo discharged or shipped beyond such limits will be subject to confiscation.

III.—Every British vessel on entering the port must show her colors, and keep them hoisted until she shall have been reported at the consulate, and her papers deposited there.

IV.—No boat or vessel, the property of a British subject, but not provided with a British sailing-letter or certificate of registry, shall hoist the British ensign within the port or anchorage, nor shall she exhibit within such limits any flag so similar to the British ensign as not to be distinguishable from it: neither shall any British subject hoist the British ensign (or any flag not distinguishable from it) over any residence or place on shore, without special authority so to do.

V.—Masters of vessels, on depositing their ship's papers at the consulate office, must also deliver a copy of the import manifest, together with a list of all passengers and persons not forming part of the registered crew on board.

VI.—Masters of British vessels must not permit foreigners, not being subjects of Treaty powers, to land without special permission so to do, and they will be held liable to provide a return passage for such foreign subjects as they may bring to the port, in addition to any penalty they may incur for breach of regulation.

VII.—When a vessel is ready to leave the port, the master will obtain a port-clearance from the custom-house, which document, together with a manifest of his export cargo, and a list of persons (not forming part of the crew) intending to leave the port in his vessel must be delivered at the consulate office, before the ship's papers can be returned to him.

VIII.—Stone or ballast shall not be thrown overboard within the limits of the harbor.

IX.—Any vessel having on board any large quantity of gunpowder or other combustible, must, until its discharge, anchor only in such berth as shall be assigned to her.

X.—Masters of vessels will be held accountable for the conduct of their crews on shore; and no seaman must be allowed on shore except between the hours of sunrise and sunset.

XI.—Seamen found on shore after sunset, or at any time drunk or disorderly, will be apprehended, and any fine inflicted which he may be unable to pay will be levied upon the master of the vessel to which he belongs, besides such further penalty as may be incurred by the master for any neglect on his part.

XII.—Should any seaman absent himself from his vessel without permission, the master shall forthwith report the same at the consulate office.

XIII.—No seaman or other person belonging to a British ship may be discharged or left behind without the express sanction of the consul, and in conformity with such stipulations as he may require.

XIV.—No British subject may establish either a boarding-house, eating-house, or other public-house of entertainment, without the sanction of the consul, and under such conditions as he may require. Any person harboring a seaman, who is a deserter or who cannot produce his discharge, with written sanction from the consul to reside on shore, will be liable to the penalty attending a breach of these regulations.

XV.—Every British subject intending to reside on shore must register his name at the consulate office within ten days after his arrival; and any British subject, having in his employ a subject of a nation not entitled by treaty to have a residence in Japan, must register the name of such servant, for whose behavior he will be held accountable.

XVI.—The discharge of firearms on shore, in the neighborhood of residences or thoroughfares, or afloat within the limits of the anchorage, is strictly prohibited.

XVII.—All cases of death occurring either afloat or on shore must be immediately reported at the consulate office.

XVIII.—British subjects are strictly prohibited from using violence against Japanese offenders or taking the law into their own hands, unless in strict self-defence, and where they are menaced with bodily injury. Any Japanese guilty of an offence may be detained and delivered over to the custom-house officials, from whom a receipt may be claimed, stating the name of the offender, and the offence charged against him by the complainant. The matter should then be reported at the consulate office.

XIX.—Riding quickly through the streets of the town is strictly prohibited.

XX.—The distance to which British subjects may extend their excursions is limited by Treaty to the imperial territory around Nagasaki. The limits in several directions are marked by a notice in English under the hand of the consul. Fuller information can be obtained at the consulate office. Persons willfully breaking the regulation in this respect, or refusing to return when so requested by Japanese officials, will subject themselves to be brought back by force, and to any further penalty which may be adjudged appropriate.

XXI.—Resistance by force to Japanese officers in the exercise of their duty will entail severe penalties.

XXII.—Any violation of the laws or customs of the country, so as willfully to cause alarm or give offence (save in so far as such laws and customs have been abrogated in favor of foreigners) is strictly prohibited.

XXIII.—The breach of any of the foregoing regulations will entail upon the offender a penalty not exceeding five hundred dollars, or three months' imprisonment.

The articles of import at Nagasaki consist chiefly of cotton and woolen fabrics, with a variety of Chinese and Asiatic produce, but no official or general statistics are at hand specifying their sorts or values. During one quarter in the first part of 1861 about 44,000 *pcs.* of both these cloths, 1,580 piculs of metals, 1,020 piculs of sugar, 1,630 piculs of medicines, 277 piculs of tobacco, 665 piculs of hides, horns and hoofs, with a few hundred piculs of dyes, woods, paints, &c., were introduced. The exports consist chiefly of coal, tea, silk, camphor, rape-seed oil, cassia, vegetable wax, marine delicacies, as seaweed, shrimps, and cuttlefish, sulphur, copper, and tobacco. More than three-fourths of the variety of exports are intended for Chinese consumption, but the first three articles in this list are worth more than all the others, and are shipped to the West. Nearly all the trade is carried on with Shanghai, and a large portion of it on Chinese and Japanese account.

In dealing with Japanese merchants, care must be exercised in regard to advances on goods, or making contracts for produce to be furnished. The native authorities issued admonitions to their subjects, in November 1861, forbidding them to accept advances on goods, or to "make contracts with bad intentions;" but such exhortations have only a temporary effect. The currency at Nagasaki consists partly of paper money, circulating in common with the national coins; the exchange between the two continually varies, but much more between dollars and the paper money. The latter does not circulate far beyond the city, and the *tempo*, so common at Yokohama, is seldom seen in Nagasaki.

The Japanese rulers, following the usages of the old Dutch monopoly, have taken measures to obtain a share of the trade at Nagasaki by purchasing foreign ships, and the first of them reached Shanghai in June, 1862; but their original scheme has apparently not been carried out.

They will gradually find out that such matters are better left to private enterprise. A fine dock for the repair of large vessels has been constructed under the superintendence of Dutch engineers at the port; the establishment connected with it turns out some kinds of machinery, and as experience gives the native workmen more skill, they are expected to furnish everything necessary to the repairs of steamers.

KANAGAWA OR YOKOHAMA.

WHEN Commodore Perry returned in Feb. 1854, to receive the reply of the Japanese government to President Fillmore's letter, he anchored the squadron at the American Anchorage near Saru-sima above Uraga. The Japanese had prepared a house at Uraga for receiving him, but he refused to return there, and finally went up the bay to seek a more convenient spot to carry on the negotiations, and anchored off Yokohama, 横濱 i. e. Cross-beach, a small fishing hamlet of 200 poor houses scattered along the beach. Here the authorities erected a few rough sheds in which to hold the interviews, and shelter the agricultural implements and other articles brought for them. By Mr Harris' treaty of 1858, Kanagawa 神奈川 was exchanged for the port of Simoda; and the next year the foreign consuls and others took up their residence in temples and such other houses there as could be obtained. The creek which divides Kanagawa from Yokohama, was found to be troublesome to cross, and ships could lie nearer the shore off that town. The Japanese therefore proposed to mark out a settlement at Yokohama, where foreigners could reside, and carry on their trade. Dwellings were built, and a customhouse and other public buildings erected. It has since been made an imperial city, and is now a thriving place of business, and will probably gradually extend so as to exceed even Nagasaki in size.

HAKODADI OR HAKODATE.

THIS town was first made known to the western world by the capture of the Russian Captain Golownin and his boat's crew by the Japanese in 1809, who seized them in consequence of a piratical attack by Russians on Yeso a few years before. It lies on the north side of the Straits of Tsuruga, and its fine harbor was a place of resort to whalers even previous to its being opened by Perry's treaty in 1854. Its population is about 10,000, which depend for their subsistence chiefly upon the trade; the name 箱館 i. e. Box-shop, may perhaps have reference to this trade. It is larger and richer than Simoda, but rather inferior to Yokohama, and forms the entrepôt of the trade with the eastern part of Yeso, receiving the provisions and goods from Nippon with which the settlers and aborigines of the island are supplied. Rice, wheat, pulse, vegetables, oil, and marine produce, are brought from the south in such quantities as to indicate that the island is very inadequately cultivated. The town is prettily situated on the eastern side of the harbor, on the slope of wooded hills; its dockyards, store-houses, and shops indicate, too, the prosperity and traffic of the inhabitants. It lies in the principality of Matsmai, about thirty miles east of the city of that name, and has constant intercourse with all parts of the island.

The British consular regulations are similar to those issued by the consul of Nagasaki. The foreign trade of the port is directed chiefly to supplying whalers from the North Pacific with provisions. Seaweed, timber, planks, and a few other articles, are sent to China.

By the treaties of 1858, provision was made for opening the port and town of Hiogo, lying northwesterly from the great manufacturing city of Ohosaka 大板 in the principality of Idzumi, about halfway between Yedo and Nagasaki, on January, 1st, 1863. The town of Ne-egata, in the principality of Taikugo, opposite the island of Sado on the north-west coast, was to have been opened to trade on January 1st, 1860; but an examination of the port showed it to be too contracted and unsafe for foreign vessels. These two ports were, however, not opened on the days stipulated, the authorities having declared that it would not be expedient for them at the moment to open either to the residence of foreigners, as they could not guaranty their safety. The British consul-general at Yedo issued a notice in August 1862, intimating that the fulfilment of these stipulations of Art. III. in the British Treaty had been deferred till January 1st, 1868; and the same concession had been agreed to by the representatives of other treaty powers.

The amount and direction of the general trade with Japan have not been reported with sufficient detail to enable one to draw many deductions for its future growth. It has, however, developed far more rapidly than was supposed probable when the country was opened, especially in tea and silk. The best silk is regarded as superior in strength and fineness to even the fine tsatlée of Hückau in China, and the supply increases with the demand. The Chinese market has taken the articles of charcoal, seaweed, isinglass, pulse, medicines, iron, dried fish, soda, flour, shells for windows, and ginseng, and this branch of the trade will gradually increase. Camphor, sulphur, porcelain, copper, nut-galls, vegetable wax, cassia, soy, and verdigris, have been furnished at rates and quantities sufficient to export to Europe. The estimated value of the export trade from Yokohama in 1860, as given by the Customs' officers, was \$4,325,000, of which one-half was in British vessels; of this sum more than \$2,500,000 were paid for raw silk alone, and about \$800,000 for tea, oil and copper. The imports at that port during the same period were upwards of \$1,050,000; of which about one-half were cotton goods, and the woolen goods. The difference was paid for in specie. Large amounts of silver coin were introduced into the country to buy native gold coin and copper cash during the same period. The total value of the foreign trade at Yokohama during the year 1860 was estimated at about ten millions of dollars, owing to the systematic diminution of the figures representing the amounts of the articles passing through the custom-houses. No official returns are available of the succeeding years, but the total export of silk in 1862 was estimated at 18,000 piculs or bales, and that of tea at nearly 100,000 packages.

Foreign goods are taken mostly in exchange for native produce rather than from a demand, except a few articles, like medicines or sapan-wood, which were formerly obtained through China. As the people become acquainted with foreign glass, iron, and cutlery, in all their useful forms, the call for them will probably increase.

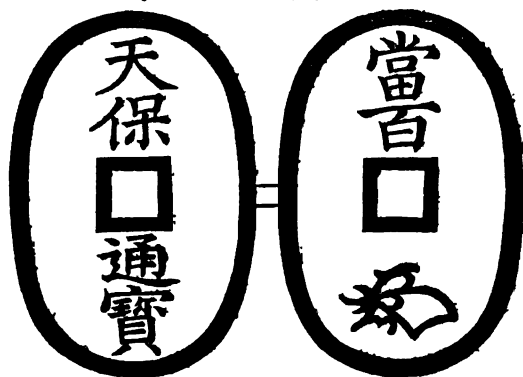
Section 4.

JAPANESE COINS, WEIGHTS, AND MEASURES.

MONEY AND CURRENCY.

THE Japanese coins are made of iron, copper, gold, silver, and an alloy of gold and silver, of various shapes and different degrees of purity. In a native work on numismatics, they are represented as circular, square, oval, and rectangular. The least in value is the iron cash, called *mon* 文 or *zeni* 錢; the large iron coin is equivalent to four of the small, and called *shi-mon-zeni*. No other iron coins are now circulated, though specimens of ancient iron coinage are not difficult to find.

The smallest copper coin is equal in value to one large iron cash, or to four small ones; it is also called *mon* or *zeni*, but frequently *shi-mon-zeni*, like the large iron cash; it is about the same size and thickness as common Chinese cash, and has lately been largely exported to China, where it passes current. The large copper coin is commonly called a *tenpo* 天保, from the *nengo* or reign (A.D. 1830-1843) in which it was first issued. The proper name is *tōō-hiaku* 當百, or *hiaku-mon zeni*, because when issued it was made worth a hundred of the small iron cash, though intrinsically not worth more than ten. It is one of the best made coins in Japan, and was forced upon the people by the reigning siogoun, and some say, in order to pay off his debts at a cheap rate.

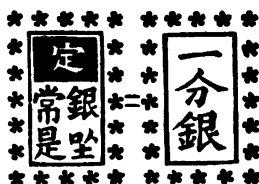


SIZE AND DEVICE OF THE JAPANESE TŌŌ-HIAKU.

On the obverse, the superscription means "current money of [the reign] Tenpo." The reverse has the name of the coin, *Tōō-hiaku*, with the Imperial cypher below the hole.

The *tenpo* passes for 24 copper or large iron cash, and 96 or 100 small iron cash. The use of the latter has consequently much diminished, though their convenience in petty transactions keeps them in use. The iron cash are cast everywhere, and they and the small copper cash are sometimes adulterated. There is a nominal money of 1000 cash, called an *ikken* 一貫 or string, worth about 9 mace of silver; 120 cash are usually reckoned to a mace, but the exchange varies.

The smallest silver coin in circulation is the *is-shiu* — 朱 or quarter *bu*, a rectangular piece half an inch long. The next largest is the *ni-shiu* 二朱 or half *bu*, of the same form; some are made of silver, others of gold and silver. The basis of the Japanese silver currency, and the most common silver coin, is the *ichi-bu* — 分, or *ichibu gin*; it is so called because it is *one portion*, or the fourth of a *riu* or tael, and does not therefore represent a fixed value, but varies according to the large coin. These are the only silver coins now in circulation, the silver tael, or four *bu*, having ceased to exist. The *isshu* is reckoned at 4 *toō-hiaku*, the *nishu* at 8, or $\frac{1}{2}$ of a *riu*; and the *ichibu* at 16, or $\frac{1}{4}$ of a *riu*. An alloyed gold and silver *ichibu kin*, about one-fourth the size of the silver coin, and a *nibu kin*, worth half a tael, are in circulation, but not to much extent.



SIZE AND DEVICE OF THE SILVER ICHIBU.

On the upper part of the obverse is the character 定, meaning *fixed, certain*, which is stamped in after the piece has been cast; below is a phrase meaning, "The mint silver is uniformly thus." The reverse is *ichi bu gin*, i. e. one quarter of a silver [tael].

The only common gold coin is the *koban* 小判, which originally weighed a tael; it was a thin, soft, oval piece, easily bent, about two inches long and more than an inch wide, bearing a variety of stamps, lines, and devices. The old coins were bought up by the Government, and a new *koban* issued in 1860, whose weight and value corresponded with the proportionate value of silver, as the two metals are reckoned in western countries. There is likewise a large gold *koban* worth 5 taels, and an *oban* 大判 worth 30 taels of silver. Also *ita-gane* 板金 or money slips, of both gold and silver; and the *ko-dama* 小玉 i. e. little pearls, made in Satsuma, of uncertain weight, and stamped in evidence of their purity. The last are current in the west of Nippon.

The following account of the Japanese monetary system is abridged from the paper drawn up for Commodore Perry in 1854, to explain the singular valuation of the precious metals at that time:—

"The integer of Japanese currency is the *toō-hiaku*, an oval-shaped copper piece, which is reckoned to be worth 100 *zeni*. The cash is like the common Chinese coin in size, but has more iron in its composition. There is another copper coin, purer, larger, and better made, called *shimon zeni*, worth four of the smallest coins. The relative monetary value of these three coins is 1, 4, 100, but their relative weight is only about .077, .13, and .56, being these fractions of a tael. The difference between a coin rated at 100 times the value of another, and weighing only seven times as much, has of course thrown the latter out of circula-

tion. This arbitrary valuation of the *toö-hiaku* has raised the price of provisions and labor to correspond to its lesser real value, while its convenience over the other two kinds of cash has also made it more popular.

"Most of the silver in circulation is a coin called the *ichibu*, weighing one-fourth of a tael. When the ore is smelted, and the pure silver is brought to the government, it is bought or reckoned at a bullion value of 225 candareens to a tael, instead of 100 candareens, its actual weight; and when the metal is sold for purposes of art or luxury, it is purchased by the people from the government at the same rate. But when coined, the government places an arbitrary valuation of 640 candareens on the tael, or 160 on the *ichibu*, when compared with the copper currency—it being reckoned at 1600 copper cash, or 16 *toö-hiaku*. By this arrangement the government makes a profit of nearly 300 per cent. on every *ichibu* issued; if the metal is extracted from the mines by paid agents, it probably stands the mint in more than this, as there must be every inducement to make it cost all they can get. Gold is also taken by the mint at one rate and issued at another, but the disparity is much less than with silver. A tael's weight of gold bullion is reckoned at 19 taels in silver currency, and the same weight of coined gold at 23½ taels. The gold *ichibu* is reckoned to be of the same value as the silver one; but most of this metal is coined into *koban*, worth one tael.

"The Japanese Government has decided to take the dollar at its value compared with bullion, and not with current coin, asserting that it must be recoined into *ichibu* before it can be circulated. A dollar weighs 71½ candareens, which, at the proportion of 225 candareens for a tael's weight of silver, makes it worth 160 candareens, or the same as an *ichibu*. The last is reckoned at 16 *toö-hiaku*, while the dollar weighs just three times as much as an *ichibu*, and is worth actually 48 *toö-hiaku*, though the Japanese will only receive it at the bullion value of 16. It is by this depreciation of the dollar, instead of levying an export duty like the Chinese, or charging a moderate custom-house fee on goods, and allowing specie to be taken at its proper value, that the Japanese design to derive their profit from the trade. The American gold dollar is by them reckoned at 4.4 candareens, or 836 cash—the twentieth part of a \$20 gold piece of 88 candareens' weight. This valuation, compared with silver, makes a gold dollar worth 52½ cents in silver; and even when actually weighed against the Japanese gold coin, supposed to be of equal purity, it is worth only 1045 cash, or 65½ cents. From this it appears that their own gold, when compared with their own silver coin, is worth about 5 to 1, while silver and gold in all western markets are nerrly as 16 to 1. But if a foreigner pays out gold coins for goods, he cannot expect the Japanese to put any higher valuation on them than they do on their own; and the depreciation for a gold dollar from 1045 (its real value) to 836 cash (its estimated value,) is, therefore very small, compared with that of a silver dollar from 4800 to 1600 cash. No one will wonder then that the Japanese Government intends to retain its specie within its own limits; for, at this rate, all the gold in the country would be immediately bought up for exportation. In practice, by the present arrangement, a gold dollar is worth only 17½ cents of copper, and in reality, its value among the people is only 22 cents; consequently, when it is found that a \$20 gold piece is reduced to \$3.55 by going

from San Francisco to Simoda, only a small portion of the depreciation is chargeable to the Japanese rulers. This singular cheapness of gold could only exist in a secluded country like Japan, and where the mines produce much more of it than they do of silver.

"Taking the silver *ichibu* as worth 1600 cash, and one-third of a dollar, the *toö-hiaku* is really worth .02083 of a dollar, or a little over two American cents; it weighs a little less; consequently, silver and copper bear about the same proportion among them as in the United States; and it is not until we compare the value of a silver dollar there at 4800 cash, with the value it bears in China, of from 1400 to 1700 cash, and the still greater discrepancy between the copper *shen* and the *toö-hiaku*, as stated above, that the extraordinary features of the currency of Japan can be understood. Further investigations are still wanted to ascertain how much bread, clothes, and labor, can be obtained for an *ichibu*, before the comparison of the currency of Japan with that of China, England, or America, is satisfactory."

As soon as the trade opened, the foreigners began to buy up all the *koban* they could obtain, as they could offer the people much more than their current value. The authorities soon discovered that the gold was rapidly leaving the country, and offered a higher price than foreigners could afford to pay, which gradually raised the rate of the *koban* from 4 to 14 *bu*, and put a stop to the exportation. In a short time the tide turned, and the *koban* came back to pay duties at the custom-house at the enhanced government value. In 1860, the new *koban* was issued, corresponding to the intrinsic value of silver, but the Government still continues to intermeddle with the currency. An *ichibu* is not estimated at its real value in proportion to dollars, but at an arbitrary custom-house exchange, that constantly fluctuates, and makes it usually worth between a rupee and half a dollar.

When the Japanese ambassadors were in the United States, they proposed that their coins should be properly assayed by the mint master, in order to obtain some reliable data for their guidance in settling the currency of their own and other countries. Four *koban* of different years and sizes were assayed.—No. 1, about sixty years old, weighed 201½ grains, two-thirds gold and one-third silver, or ⅔ths fine; value \$5.95, including the silver.—No. 2, lately coined, weighed 174 grains, four-sevenths gold and three-sevenths silver nearly, or ⅞ths fine; value \$4.44, including the silver.—Nos. 3 and 4, of the last emission, weighed 138½ grains, or ⅞ths, or four-sevenths, which seems to be the present legal standard; value \$3.57, or \$3.41 without the silver.—Nos. 5 and 6, two *ichibu kin*, rectangular coins of about one third gold, weighing 25½ grains.—No. 7, a similar shaped coin, a *nibu-kin*, weighing half No. 2, of rather more than one-fourth gold, rest of it silver apparently.—No. 8, the gold *ichibu*, value \$1.11, or one-fourth of No. 2 in weight and fineness.—Nos. 9 and 10, recent gold *ichibu*, value \$0.89½, or one-fourth of Nos. 3 and 4.—No. 11, a half *ichibu* or *ni-shu* of silver, weight 41 grains, worth \$0.11.—No. 12, a silver *ichibu* of old coinage, weight 134½ grains, ⅞ths fine, worth \$0.369, or 37 cents.—No. 13, a silver *is-shu*, weight 28½ grains, worth 8 cents.—No. 14, a new silver *ichibu*, weight 134½ grains, ⅞ths fine worth 33.28 cents, or nearly one third of a dollar.

JAPANESE WEIGHTS.

These are, like those of the Chinese, based on a decimal scale, with the same exception of the *kin* or catty, which is 16 *me* or taels. The tael, *ichi momme*, is equal to 2.133 *drs. av.*, or 58.33 *grs. troy*, and subdivided as follows:—

10 <i>me</i>	十毫	<i>ju mo</i>	equal	1 <i>rin</i>	一厘	<i>ichi rin</i> ;
10 <i>rin</i>	十厘	<i>ju rin</i>	"	1 <i>fun</i>	一分	<i>ip pun</i> ;
10 <i>fun</i>	十分	<i>ju pun</i>	"	1 <i>momme</i>	一匁	<i>ichi momme</i> , or tael.

The precious metals are weighed by this scale. Medicines are bought and sold by the same weights, using the *rin*, *fun*, and *momme*; 2 *momme* are called *han-riu-me*, i. e. half-a-*tael*; and 4 *momme* are called *ichi riu-me*, i. e. one tael; 5 *momme*, or $1\frac{1}{2}$ *riu* is designated *go-momme*, or *ichi-riu* to *ichi-momme*. Every four *momme* is called so many *riu* or taels, a nominal mode of computation derived from the monetary system; 12 *momme* is called *san riu*; 16 *momme* are *yo riu*; and so on, up to 40 *riu* or 160 *me*, which is termed *ik kin* 一斤 a catty, or $1\frac{1}{2}$ *lbs. av.* In speaking of weights, the word *momme* is used after all numbers except the multiples of 10, when it is shortened to *me*. The higher numbers are written thus in Chinese characters:—

10 <i>momme</i> or <i>ju momme</i> is written	十匁
100 "	百匁
1,000 "	貫匁
10,000 "	十貫匁
100,000 "	百貫匁
1,000,000 "	千貫匁
10,000,000 "	萬貫匁

The picul is called *hiak-kin*, i. e. 100 catties, and is accounted equal to 133 $\frac{1}{2}$ *lbs. av.* or 125 Dutch pounds; sometimes its weight is only 130 *lbs. av.*; 1000 *me* or *ik-kan* is $6\frac{1}{2}$ catties; 1250 catties make a *koku* in weight.

MEASURES OF LENGTH.

The integer of timber measure is the *shiaku* or foot, called in distinction the *kane shiaku*, or metallic foot. The smallest division is the *rin* or line:—

10 <i>rin</i> , or <i>ju rin</i>	十厘	make 1 <i>bu</i> , equal to 0.12 <i>in. English</i> .
10 <i>bu</i> , or <i>ju bu</i>	十分	" 1 <i>sun</i> " 1.2 <i>inches</i> "
10 <i>sun</i> , or <i>ju sun</i>	十寸	" 1 <i>shiaku</i> " 12 <i>inches</i> "
3 <i>shiaku</i> , or <i>san-shiaku</i>	三尺	" " 1 yard "
6 <i>shiaku</i> , or <i>rok' shiaku</i>	六尺	" 1 <i>ken</i> " 1 fathom.
60 <i>ken</i> , or <i>roku-jik ken</i>	六十間	" 1 <i>chu</i> or <i>mats</i> , equals 360 feet.
36 <i>chu</i> , or <i>san-jū-rok' chu</i>	三十六町	" 1 <i>ri</i> , equal to 12,960 feet.

The *ri* 里 or Japanese mile equals 2.45 miles English; a degree on the equator contains $21\frac{1}{3}$ *ri*, but there is some discrepancy in this measure; and in the three principal islands it differs so much that caution is needed in estimating distances. Rough timber is bought by the *yama-ken-saü*, a measure of 63 *sun*; there is a carpenter's ell of 6 *shiaku* used in building called *ken-saü*; the *go-shiaku-saü* is a measure of 5 *shiaku*.

The integer of cloth measure is also called *shiaku*, but it is 3 inches longer than the preceding, and like it decimally divided; it is known as the *kuzhira shiaku*, or whale's foot, to distinguish it. The *rin* of the cloth measure is .015 inches, the *bu* is .15 inches, the *sun* is $1\frac{1}{4}$ in., and the *shiaku*, 15 inches. This measure is a little longer than the Chinese coid, as the other is shorter than any foot rule now used in China. One of the most common units of measurement among the Japanese is the *mats* which cover the floors of their houses, which uniformly measure 6 feet by 4.

SQUARE MEASURE.

The integer of this measure is the square *ken* or fathom, measuring 36 square feet, called *po* 歩 and *tsubo* 坪, equal to 4 square yards.

30 <i>po</i> make	— 畝	<i>is' sho</i> , equal to	1089 square feet.
300 <i>po</i> "	— 段	<i>is' tan</i> , "	10,800 " "
3000 <i>po</i> "	— 町	<i>is' choö</i> , "	108,000 " "

An English acre equals 1210 *tsubo*; a Japanese *tan* is only 90 feet less than a rood, and a *choö* contains 2.48 acres nearly.

MEASURES OF CAPACITY.

The integer of these measures is the *shoö* or *mas*, 升 or pint, which measures 3.2 inches by 5.9 inches, and contains 111.392 cubic inches. Like the Chinese measure of the same name, it is subdivided decimally, till it reaches the *dooku* 粟 or millet seed:—

10 <i>dooku</i> , or <i>jün dooku</i>	十 粟	make 1 <i>ke</i> , or <i>is' ke</i> .
10 <i>ke</i> , or <i>jik-ke</i>	十 圭	" 1 <i>sats</i> , or <i>is' sats</i> .
10 <i>sats</i> , or <i>jis' sats</i>	十 撮	" 1 <i>sai</i> , or <i>is' sai</i> .
10 <i>sai</i> , or <i>jis sai</i>	十 抄	" 1 <i>shiaku</i> , or <i>is' shiaku</i> .
10 <i>shiaku</i> , or <i>jis shiaku</i>	十 勺	" 1 <i>goö</i> , or <i>ichi goö</i> .
10 <i>goö</i> , or <i>jis goö</i>	十 合	" 1 <i>shoö</i> , or <i>is' shoö</i> .
10 <i>shoö</i> , or <i>jis' shoö</i>	十 升	" 1 <i>to</i> , or <i>is' to</i> , or <i>to mas'</i> .
10 <i>to</i> , or <i>jit to</i>	十 斗	" 1 <i>koku</i> , or <i>ichi koku</i> .

The *koku* 石 or stone, (originally written 斛) measures 6446 cubic feet, and contains 5.13 bushels; it is the measure by which revenue is estimated, even when there is no grain or produce of any kind; its value is then reckoned to be a *koban*.

MEASURES OF TIME.

The Japanese have adopted the sexagenary cycle from the Chinese with its two component series, the *ziyuni no shi*, or twelve branches, and the *shik-kan* or ten stems, and combined them in the same manner. The twelve are applied to the same animals, hours, constellations, and points of compass; and the ten are distributed among the five elements as in China, as follows:—

ZIYUNI NO SHI 十二枝

- | | | |
|------------|---|-------------|
| 1. Ne | 子 | the rat. |
| 2. Ushi | 丑 | the ox. |
| 3. Tora | 寅 | the tiger. |
| 4. U | 卯 | the hare. |
| 5. Tatsa | 辰 | the dragon. |
| 6. Mi | 巳 | the snake, |
| 7. 'Mma | 午 | the horse. |
| 8. Hitsuzi | 未 | the goat. |
| 9. Saru | 申 | the monkey. |
| 10. Tori | 酉 | the cock. |
| 11. Inu | 戌 | the dog. |
| 12. I | 亥 | the boar. |

SHIK-KAN 十幹

- | | | |
|-----------------|---|-----------------------|
| 1. Ki no ye | 甲 | wood growing. |
| 2. Ki no to | 乙 | wood hewed. |
| 3. Hi no ye | 丙 | fire in lightning. |
| 4. Hi no to | 丁 | fire in lamps, &c. |
| 5. Tsuchi no ye | 戊 | earth in mountains. |
| 6. Tsuchi no to | 己 | earth in crockery. |
| 7. Ka no ye | 庚 | metal in ore. |
| 8. Ka no to | 辛 | metal in hammers, &c. |
| 9. Mitsu no ye | 壬 | water in springs. |
| 10. Mitsu no to | 癸 | water in pipes. |

The intercalation of the months in the luni-solar year is the same as in China, and new year falls on the same day. The twelve months have appellative names different from those known in China, which are used in writing as descriptive terms, like our month of Flowers, month of Showers, &c., and not as their common designations, as follows:—

- | | | | |
|-------------------------|------------------|-----|--------------------------|
| 1st month, shiyo gwats, | is mo tsuki | 睦月 | the amicable month. |
| 2d " ni gwats, | is ki sara gi | 衣更着 | change-dress month. |
| 3d " san gwats, | is ya yoi | 彌生 | the budding month. |
| 4th " shi gwats, | is u doubi | 卯月 | the blooming month. |
| 5th " go gwats, | is sa tsuki | | the transplanting month. |
| 6th " rok' gwats, | is mi na tsuki | 水無月 | the dry month. |
| 7th " sichi gwats, | is fumi tsuki | 文月 | or letter month. |
| 8th " hachi gwats, | is ha tsuki | 葉月 | or leaf [filling] month. |
| 9th " ku gwats, | is naga tsuki | 長月 | or long-night month. |
| 10th " zigu gwats, | is kami na tsuki | 神無月 | or godless month. |
| 11th " zigu-ichi gwats, | is shimo tsuki | 霜月 | or hoar-frost month. |
| 12th " zigu-ni gwats, | is shiwasu | | or final month. |

The day commences at sunrise, and the night at sunset, each of which hours is called *mutsu doki*, or 6 o'clock. The names of the twelve hours, commencing at the hour of the rat, which answers to midnight, are reckoned thus:—

Midnight is <i>kokonots</i> ,	or 9th hour	Noon is <i>kokonots</i> ,	or 9th hour.
2 A.M. is <i>yats</i> ,	or 8th hour	2 P.M. is <i>yats</i> ,	or 8th hour.
4 A.M. is <i>nanats</i> ,	or 7th hour	4 P.M. is <i>nanats</i> ,	or 7th hour.
Sunrise is <i>mutsu doki</i> ,	or 6th hour	Sunset is <i>mutsu doki</i> ,	or 6th hour.
8 A.M. is <i>itsutsu</i> ,	or 5th hour	8 P.M. is <i>itsutsu</i> ,	or 5th hour.
10 A.M. is <i>yots</i> ,	or 4th hour	10 P.M. is <i>yots</i> ,	or 4th hour.

Each of these hours is divided into eighths, and the notation of the intervals is done by adding words to the hour; as *kokonots-han* is 1 o'clock A.M.; *kokonots-han-sugi* is half-past one; *yats-han-sugi-maye* is a quarter past 3 A.M. Time in the daytime is denoted by the same terms. By this method of computation, the length of an hour in the day and night constantly varies.

The years are reckoned as in China, by the sexagenary cycle, and by the *nengo* 年號 or reign of the mikado. This custom was probably introduced from China with its name, by the 37th daïri Ko-toku ten-wo, about A.D. 645, and has ever since been retained. The Japanese sovereigns, like the Chinese emperors of the Han and Tang dynasties, still employ two, three, or more *nengo*, or styles during one reign, which renders the computation of time for a series of years more perplexing than in China, where the *nien-háu* now synchronizes with the entire reign. The people are in the habit, like the Siamese, therefore, of reckoning a series of years by the cycle, and by the animals which denote the duodecimal series. If it had not been for the existence of this sexagenary cycle, preserving the sequence of the years by their separate names, the chronology of the Chinese-language nations in Eastern Asia would have been thrown into utter confusion and rendered nearly worthless.

Section 5.

AMERICAN COMPACT WITH LEWCHEW.

DURING the American Expedition to Japan in 1853 and 1854, Commodore Perry visited Napa many times, and had much intercourse with the authorities of the Lewchewan islands. This group is peopled by a race that has imitated the civilization of the Chinese, but which has adopted the language of the Japanese. They were conquered by the prince of Satsuma about A.D. 1605, and their king carried captive to Japan for four years; he was allowed to return on consenting to be a vassal, and his kingdom a fief of his captor, who still requires the people to trade with his subjects at Kagosima in the south of Kiusiu. The islanders also acknowledge a partial fealty to the Chinese, who permit

them to send a junk to Fahohau with envoys and presents for Peking, and an assortment of goods to trade; the Government and merchants maintain a factory at the former city. Japanese junks frequent the port of Napa, but no Chinese vessels or people now come to trade. The native authorities have always shown great reluctance to supply ships coming into the harbor with water or provisions, but whether it is owing to the restrictive policy of the Japanese resident at the court, or to their own fears lest their power be weakened by permitting too much freedom to their own people, is not clear. The islands supply enough for their population, and export coarse cottons, grasscloth, saki or rice-whiskey, and sugar, with some millet and other grains, to Japan and China.

After he had completed his negotiations with the Japanese, Commodore Perry and the native authorities of the islands agreed to certain stipulations contained in the following Compact, which will at least form a basis for the conduct of the two parties. The Lewchewans have so long maintained a seclusive policy, however, that practical experience of the good effects of more trade and intercourse, is the most likely way to induce them to relax in their laws; but there is very little produced in their country on which to base a trade. The prince of Satsuma collects a revenue from the poor islanders, who are greatly oppressed.

COMPACT OF NAPA.

Hereafter, whenever citizens of the United States come to Lewchew, they shall be treated with great courtesy and friendship. Whatever articles these persons ask for, whether from the officers or people, which the country can furnish, shall be sold to them; nor shall the authorities interpose any prohibitory regulations to the people selling, and whatever either party may wish to buy, shall be exchanged at reasonable prices.

Whenever ships of the United States shall come into any harbor in Lewchew, they shall be supplied with wood and water at reasonable prices; but if they wish to get other articles, they shall be purchasable only at Napa.

If ships of the United States are wrecked on Great Lewchew, or on islands under the jurisdiction of the royal Government of Lewchew, the local authorities shall dispatch persons to assist in saving life and property, and preserve what can be brought ashore, till the ships of that nation shall come to take away all that may have been saved; and the expenses incurred in rescuing these unfortunate persons shall be refunded by the nation they belong to.

Whenever persons from ships of the United States come ashore in Lewchew, they shall be at liberty to ramble where they please, without hindrance, or having officials sent to follow them, or to spy what they do; but if they violently go into houses, or trifle with women, or force people to sell them things, or do other such like illegal acts, they shall be arrested by the local officers, but not maltreated, and shall be reported to the captain of the ship to which they belong, for punishment by him.

At Tumai is a burial-ground for the citizens of the United States, where their graves and tombs shall not be molested.

The government of Lewchew shall appoint skillful pilots, who shall be on the lookout for ships appearing off the island, and if one is seen coming towards Napa, they shall go out in good boats beyond the reefs to conduct her in to a secure anchorage, for which service the captain shall pay the pilot five dollars; and the same for going out of the harbor beyond the reefs.

When ships anchor at Napa, the local authorities shall furnish them with wood at the rate of three thousand six hundred copper cash per thousand catties; and with water at the rate of six hundred copper cash, (43 cents) for one thousand catties, or six barrels full, each containing 30 American gallons.

Signed in the English and Chinese languages by Commodore MATTHEW C. PERRY, Commander-in-chief of the United States' Naval Forces in the East India, China, and Japan seas, and special envoy to Japan, for the United States; and by SHO FU-FING, Superintendent of Affairs (*Tsu-li-kuan*) in Lewchew, and BA RIO-SI, Treasurer of Lewchew at Shui, for the Government of Lewchew; and copies exchanged this 11th day of July, 1854, or the reign Hienfung, 4th year, 6th moon, 17th day, at the Town-hall of Napa.

The Mexican dollar is reckoned at 1440 Chinese cash, and is readily received. Gold is taken at par; both it and silver are much used in making hair-pins for the gentry, and a few other articles, and do not circulate as money.

Pigs, bullocks, poultry, coarse sugar, fish, eggs, greens, egg-plants, pulse, sweet potatoes, and rice, with water and wood, constitute the chief supplies which a ship can expect to get at Napa. The watering-place is about a mile up Junk River, and beyond the town of Napa, on the left hand of the river, and is easily reached at high water in a long-boat. No supplies can be bought in the markets of Napa, but they are furnished by official purveyors to such an extent as they see fit, and brought off to the vessel. The most eligible place for landing in rough weather is near Tumai, where the American Commodore had a coal dépot built, but in ordinary times a landing can be made near False Capstan Point; it is the nearest to Napa, and there is a small boat passage through the reefs just north of it. The people are shy towards foreigners, not because they are afraid of them so much as of their own oppressive officials, who may punish them for too open an intercourse. Since this Compact was signed, three or four ships have touched at Napa, whose wants have been supplied by the authorities to a limited extent.

CHAPTER V.

MONEYS, WEIGHTS, &c., IN CHINA.

Section 1.

CHINESE CURRENCY.

THE absence of a national coinage in the precious metals among so commercial a people as the Chinese, is so singular an exception to the general usage, even of Asiatic nations, that one is led to inquire into the reasons for it; and his surprise is rather increased to find that the cause is to be found in the commercial freedom which has done so much to elevate the people. The Government on the one hand is not strong enough everywhere in its wide domain to punish those subjects who counterfeit its coin; and on the other hand, not honest enough itself to issue pieces of a uniform standard for a length of years, and thereby obtain the confidence of its subjects. It will not receive debased metal in payment of taxes, and it is not able to force tax-payers to take adulterated coin. The result has been that all parties have adopted a form of bullion that partakes of the nature of coin in the single point, that the pieces are of a known weight and purity; and yet which can be tested without much loss, and bears no effigy to authenticate its origin.



SIZE AND SUPERScription OF THE CHINESE CASH.

The only native coin, therefore, now in use throughout China is the *taien* 錢, called *cash* by the English, and *sapeque* by the French, who derived it from the Portuguese word *sapeca*. It is circular, measuring between five-sixths and nine-tenths of an inch in diameter, and has a square hole in the middle for the convenience of stringing them. It is cast, and not stamped or minted; the obverse bears the name of the province in which it is cast in Manchu letters, on the right side of the square hole, and the word 寶 for 寶 on the left; on the reverse is the name of the reign (as Tánkwáng, Hienfung, &c.) in Chinese above and below the hole, with the addition of two characters 通寶 *tung páu*, i.e. 'current money,' on the right and the left of it. Copper coins of this shape were first cast about B.C. 1120, at the beginning of the Chau dynasty,

when Saul was king of Israel; and has ever since been retained as the form and material of the national currency. From China they have passed into Corea, Japan, Annam and Tibet, whose rulers have imitated them, and whose inhabitants still use them. Besides this shape, copper coin shaped like knives, and others like rectangular labels, were current during the early dynasties before the Christian era; their forms and superscriptions, with much other information respecting this subject, can be seen in Chaudoir's *Recueil des Monnaies*.

The mode of casting the cash is given in the Imperial Statutes, and described in the following extract, explaining the usage at Canton, which is much the same in other provincial mints:—

"From the Board of Revenue at Peking models are obtained, and in each provincial city a mint is established, over which a director is appointed. When the mint is to be worked, the director weighs out the proper quantity of copper, and delivers it to the workmen to be cast into money, and to be returned according to the quantity given; but these workmen often throw sand into the mold with the metal, and are thus enabled to purloin the copper. When about to cast, they take the metal and put it into a furnace to be fused, and afterwards pour it into a clay mold. Afterwards, when the metal has become cold and hard, it is turned out of the mold. The weight of each piece of the money is one mace (*taïen*), and hence it is called by the same name; the value fixed by government is the thousandth part of a tael's weight of silver.

"The second, fifth, and eighth days of each month are the periods fixed for commencing the work; and the third, sixth, and ninth are the days for weighing the money, and delivering it to the commissioner of finance. The people who work the mint are required to be always in the establishment, not being at liberty to go in and out at pleasure; but they are changed in rotation; and, except on the third, sixth, and ninth days, after they have weighed and delivered the money over to the commissioner of finance, are they permitted to leave the mint, but are required to return on the same evening."—*Chinese Christomathy*, page 257.

The officers who superintended the mints in the provincial capitals debased the coins from time to time, until during the reign T'aukwang (1821 to 1851), it became so bad that it would not remunerate forgers to counterfeit it. By an edict of Shun-chi in 1644, when the Manchus first coined cash, the proportions of the alloy were fixed at 7 parts copper and 3 parts zinc. In the 5th year of Kienlung (1741), the ingredients were altered to 50 parts of copper, 41 $\frac{1}{2}$ of zinc, 6 $\frac{1}{2}$ of lead, and 2 of tin. Analysis has, as might be expected, shown a great diversity in its composition. In some of the best specimens, the constituents are copper 79, zinc 10, lead 7, and tin 4; in others, the copper is alloyed with 10, 20, 30, and even 40 per cent. of tin; sometimes copper and zinc alone are found; and again, iron mixed with them. The weight of the pieces was also reduced, so that a large proportion of the coinage of T'aukwang's reign weighed only 3 or 4 candareens. They were still regarded as a legal tender, but the government bankers in some places indemnified themselves for the depreciation by making the tax-payers add as much as 40 per cent. for loss when exchanging them into sycee.

In the reign Hienfung, the government became so impoverished, that it resorted to many expedients to revive its credit; iron cash and paper notes were substituted for the copper cash. The former were cast of the full weight of one mace, and larger ones bearing the different values of 10, 20, 50, and 100 cash each, were made at Peking in 1853 and 1854. A few tons of this wretched emission were forced upon the people, but the attempt signally failed as a whole, and the iron cash remained at

the capital in the hands of the officials, who had wasted fully a million of taels in the foolish enterprise. Since the opening of the Japanese trade, many tons of small copper cash have been imported into China, where they pass current with others.

Silver and gold coins were both used in China at different periods of ancient history, but none have been issued by the present or any modern dynasty. A consciousness of their inability long to maintain the standard alloy and weight throughout their vast domain, and a knowledge of the facility with which the coins could be counterfeited, combined with their ignorance of the advantages of a standard gold and silver currency, and a disposition to meddle with the coinage, explains why the Manchu emperors have never attempted to circulate silver coins. Since they ascended the throne, the empire has widely enlarged its trade and resources, but the currency at present is rather worse than then.

Spanish, Mexican, and South American dollars (though not acknowledged by the Government) are employed as a commercial medium throughout the maritime provinces; but the habit of stamping them soon takes from them one of the chief advantages of coined money—that of having a fixed and certain weight. The broken dollars in circulation, being always taken by their weight, do not differ materially from sycee silver. The only difference is, that the former has a fixed, the latter an uncertain, standard of purity; and dishonesty practiced with the former does not require the labor, and is more readily detected than when practiced with the solid ingots of the latter.

The *nominal moneys* of account are the 兩 *liang*, 錢 *tsien*, 分 *fan*, and 厘 *li*, called by foreigners *tael*, *mace*, *candareen*, and *cash*, the proportion of which, one to the other, is decimal. The candareen is equal, *only in accounts*, to ten cash, but owing to the deterioration of the coin, its actual value at Canton in 1854 was about the eighteenth part of a candareen, 1900 ordinary cash or 1800 picked ones, being paid for a tael. Since that time, owing to the export of cash and other causes, the exchange has risen, and only 1350 to 1400 can now be obtained for a tael. The rate is constantly fluctuating, however, and is only mentioned here chiefly to show the extremes. At Amoy in 1850, a Spanish dollar would purchase 3600 pieces of the poorest kind, but only 1300 selected ones to take to Bali, or 1560 current ones as they run on the strings. In Canton, at the same time, a dollar bought about 1200 current cash; and at Shanghai 1750. In 1863, a dollar at the same three cities would exchange for 1100, 1050 and 1100 pieces, showing the result of freer intercourse.

The terms *tael*, *mace*, *candareen*, and *cash* are merely denominations of weight, the cases in which stamped pieces of silver (other than clean dollars) pass current as coin, being few, except in small transactions. It is more convenient, however, to speak of them as nominal moneys. In the time of the E. I. Company, the usage of trade acknowledged a slight difference between the *money* and the *commercial* tael, at the standards assigned by foreigners to each; for at the money standard of 120 oz. 16 *dwt.* troy, for 100 taels, a picul of 1600 taels should weigh 132 $\frac{1}{2}$ lbs. *av.* while its actual standard was 133 $\frac{1}{2}$ lbs.; and it followed therefore, that while 3 taels' weight equaled 4 lbs., 3 taels of money were

equal \$4.16. The difference appears to have arisen from the different rates of paying out money, and perhaps too from convenience with respect to turning Chinese into English weights, and *vice versa*. At present there is no difference allowed, and at the rate of 717 taels per \$1000, it is really almost inappreciable.

The circulating medium in transactions with foreigners at the open ports is chiefly whole and broken dollars; the value of the dollar in relation to the tael varies in different transactions. In calculations or accounts between foreigners and merchants, and almost always in bargains among the Chinese themselves, taels are converted into dollars at the rate of

		taels 720	} per \$1000
But payments in cash are generally weighed at		717	
Tradesmen generally, when paid by compradors, receive payments at	715 to	717	
Payments into the E. I. Co.'s treasury were at		718	

The value of the tael in relation to sterling money was reckoned by the East India Company at 6s. 8d., but its intrinsic value varies according to the price paid for dollars per ounce in London. Hence, to convert taels into sterling money, multiply the price paid for dollars by the multiplier 1.208. Thus, if the price of the dollar be 60d. per ounce, the value of the tael will be $60 \times 1.208 = 72.48d.$; if at 66d., it will be 79.728d.; and for any other price in the same proportion.

In the northern ports the value of dollars is estimated according to their purity in comparison with sycee; but as they become more known, their uniform size and purity makes them convenient for payments, and causes them to gradually advance in proportion. At Tientsin and Niu-chwang, the usual exchange is 70 taels' weight of sycee for \$100; which is nearly the par value; while at Shanghai, where they are better known, they range from 74 to 81 taels per \$100; and still again, at Canton, where they are best known, they are rarely worth over 72 taels per \$100.

Dollars, even of the same weight and purity, are not received alike by the Chinese; thus, at Chusan and Ningpo, during the war of 1842, Republican dollars passed more freely than Spanish dollars; but certain coinages of the latter in the reign of Carlos III., called *old head Carolus dollars*, if uninjured, used to bear a premium, sometimes at Canton as high as 12 per cent.; while undefaced Ferdinand dollars were only a little above par, or chopped dollars. One kind of Spanish pillar dollar, bearing the stamp of the letter G, or G*, denoting that it was from the Guadalajara mint in Mexico, called by Chinese *kau tsien* 鈞錢 or 'hooked dollar,' from its resemblance to that letter, was at the same time received at a discount, sometimes as great as 5 per cent.

The fastidiousness of the Chinese respecting certain coins is like that of the Turks and Arabs; and among them all it probably arose from the habit of receiving coins of a certain stamp, from a uniform experience that they were always good; this habit disinclined them to receive any other sorts from ignorance of their purity; and through the influence of native bankers and speculators, a difference of exchange among the kinds of coins was maintained for their own advantage as long as possible. The custom of secreting coins of undoubted purity is common among the Chinese, and strengthens this artificial premium and discount in country districts.

In the year 1853, after many previous ineffectual efforts, an arrangement was made among foreigners in Canton, to remedy these troublesome distinctions, and at the instance of their consuls, was enforced upon the Chinese by their own authorities; by it all silver coins were made receivable at their real value in payments at the custom-house. All kinds of dollars soon became current there with Spanish dollars, but still by weight at the rate of 717 taels per \$1000. The preference of the Chinese in the interior for Carolus dollars caused them all to be collected at Canton, and sent wherever a premium could be obtained. In 1853, the disturbed state of the country having rendered imports less saleable, there were large importations of specie and bullion (chiefly of Mexican dollars) to settle the balance of trade in favor of China; in the twelve months from Sept. 1853, \$12,100,000 were brought to Hongkong; these importations diminished as soon as a reaction in the general import trade occurred, and the annual importation for six years up to 1858 did not average £1,000,000. In 1859, the flow of specie changed towards China more decidedly. The previous year, about 26 millions of dollars passed through Hongkong, of which over 14 millions were from eastern ports, and about 21 millions went to India; but in 1859, out of 30 millions passing through Hongkong, nearly 19 millions came from Europe and California, and over 20 millions went to the eastern ports, most of it to buy Japanese kobans and raw silk.

Transactions at Canton are now conducted by means of Mexican dollars, with a continually increasing proportion of bank notes from Hongkong. At Shanghai, the clean "old head" (or 四工銀 *si-kung-yin*) dollars maintained their superiority till 1861, and were valued about one-fifth higher than other descriptions; they then began to depreciate, and are now quoted less than clean Mexicans. The currency at that port consists of Mexican dollars and sycee, and the former are rapidly coming into use throughout the silk and tea districts, in place of Spanish coins, which are therefore reappearing in the maritime ports.

The following remarks upon Chinese currency, though written several years ago, are still valuable, as they describe many particulars respecting counterfeiting dollars, and other features of the currency still existing; they are inserted with slight alterations. As long as the Chinese government is unable to maintain a standard coinage, these anomalies will remain in its currency.

"The dread of change, which has been generally considered as the leading characteristic feature in the domestic, as well as foreign, policy of China, has extended its full influence to the circulating medium of the country. The government is determined that its coffers, at least, shall suffer no defalcation by depreciation of the currency: and hence the imperial taxes and duties are required to be paid in pure silver. In every large town are *yin tien*, 'or money shops,' the inferior class of which are establishments of money-changers and shroffs; the more respectable are private banks. Of the latter class every officer, who has any superintendence of the revenue, employs one or more to receive the taxes and duties, with a fixed allowance for loss in melting, and having reduced them to sycee silver, to become responsible for the purity thereof. The establishments which are thus connected with government are licensed, a privilege for which they have to pay, but not largely. They are remunerated by the surplus allowance or waste, which always exceeds what is necessary. Taxes are generally handed over to them by the government; mercantile duties are paid into their banks by the merchants from whom they are owing, and the banker in such case gives the merchants a receipt for the amount, accompanied by a certificate that it shall be

paid to government within a certain period. The refined silver is cast into ingots, and stamped with the names of the banker and the workmen, the year and district in which it is cast, and sometimes the kind of tax for which it is cast to pay. Should any deception be afterwards discovered, at whatever distance of time, the refiner is liable to severe punishment.

"However wisely this system may have been contrived for the maintenance of the imperial resources, in a commercial point of view it is most burdensome and inconvenient. Since the establishment of foreign trade, the introduction of dollars has supplied the defect to a certain, though but very limited, extent; and so sensible did the native authorities appear to be of its advantages, that for a time the coinage of dollars in imitation thereof was allowed—may even practiced under authority of a provincial treasurer. 'But,' says the *Yin Lun*, a Chinese treatise on money, 'though they commenced at a higher rate than the foreign dollars, in a short process of time they sank greatly below the standard, whilst the foreign money preserved its original degree of purity.' The manufacture of dollars is now disallowed by the laws; but, according to the common report of natives, is still carried on in spite of them to a very considerable extent. In the district of Shunteh, south of Canton, there is said to be a very large establishment, in which as many as a hundred workmen are frequently employed. Dollars are there manufactured of all gradations of value, some alloyed with lead, some made of base metal and coated over with silver, and others deteriorated by cutting out pieces of silver and filling up their places with lead, disguised by repeated stamps; this last method is frequently practiced with genuine Spanish dollars. These false coins are said to possess European stamps, procured at great expense; but sometimes they attempt imitations, in which the omission or disfiguring of some letters betrays the deception to a European eye. So common, however, are their dollars in circulation, that men from this district are most usually selected as shroffs, and there is a book in print for the use of the public, giving an account of the process of manufacturing each variety of false money, and rules for detecting the forgery. These rules are practically known by the shroffs, so that they can tell any description of dollars or degree of alloy at a glance. When the dollar is made of true value, the imitation is often very good, and detection is indeed difficult; yet the shroffs perceive the imitation and reject it. The profits of the concern in Shunteh are so large that it can easily afford to quiet all interference on the part of the local officers.

"On the east coast of China, smoothfaced dollars used to occur in large quantities, which were round pieces of unstamped silver of a dollar's value, mixed with other dollars worn smooth. The provincial treasurer of Fuhkien issued a native coin in 1838, about the size of a Spanish dollar. The obverse bore a portrait of the god of Longevity, with an inscription showing that it was cast in the reign Tánkwáng, and by the treasury scales weighed 7 mace 2 cand., and was *tsuk was yin ping*, i. e. 'a cake of pure sycee silver.' The reverse exhibited a tripod, denoting that it was a government coin struck for the army, with the legend *Taiswas* in Manchu, to show that it was cast in Formosa. The workmanship of this coin was very rude. In 1842, this piece had already depreciated in weight, and in 1845, it was 5 per cent. under weight. An attempt was also made at Changshan near Amoy to coin silver in 1844; the first issue weighed 7.4 mace, but the pieces soon deteriorated 15 per cent., and all of them vanished from circulation.

"With regard to the cash, which is the only native coin now in circulation, the government have within the last few years taken strong measures to suppress the private manufacture of it, but in vain. The rapacity of the governors is strongly exemplified also in its gross adulteration since that issued in the reign of Kanghi, about 150 years ago, or even since that of Kienlung, not more than 70 years since. It is debased in the coarsest manner with iron dust and sand (*tsé shé*), and presents a gritty appearance to the eye.

"In China, as in Europe, coins and medals have attracted the attention of antiquarian collectors; and some of them offer subjects of interest to the curious. The most elaborate work on the subject is the *Récueil des Monnaies* of Baron S. de Chaudoir, published at St. Petersburg in 1842; two monographs have also been published in the *Asiatic Society's Transactions* at Hongkong and Shanghai. In the middle ages of China, they were valued as affording specimens of many ancient forms of characters, which in the time of feudal anarchy immediately preceding had been forgotten. Symbolical figures of birds and animals are those with which the medals are generally stamped. Coins are also strung together in different ways and worn on the person, especially of children, whose parents go around among their friends to beg a cash from each to make an amulet for the child, under the belief that their fortunes will thereby be linked with his; good cash of Kanghi's reign are often suspended over beds, as charms, and sometimes as ornaments. This fancy does not

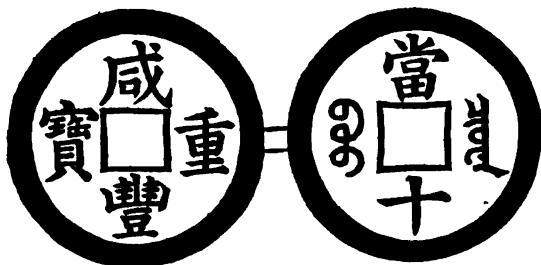
appear peculiar to the Chinese. 'Many of the ancient coins found in Greece,' says Walpole, 'are pierced, and through the hole a string is passed, by which they are hung as ornaments round the heads of women and young girls. This custom is not new, we find it mentioned by Chrysostom, who particularly refers to the coins of Alexander.' Every traveler in Syria at the present day has seen women and others wearing coins hung on their veils, and strung around their necks."

A few remarks on the *banking* establishments above referred to, will not be irrelevant to the present subject. There are some bankers not connected with ordinary mercantile business; but the majority are either agents, drawable at will, in which case no interest is allowed; or they take money at an interest not exceeding 12 per cent., in which case some days' notice must be given before any portion can be withdrawn. They do not appear to differ materially from similar establishments in Europe; but they are not chartered or privileged banking companies. Paper money was formerly issued by the government, but not at present in its own name or guaranty, though no restrictions are placed on its circulation. The year A. D. 807 is mentioned as the epoch when the emperor opened deposit banks for copper or iron coin, for which the depositors received sight notes payable to bearer, called *fei-t sien* or flying money. The credit of these notes depreciated, but in 970, the institution was revived by the emperor, and during the next 50 years about 4½ million dollars' worth of these notes were called in. They were in favor over the copper and iron money, and their value was maintained for a long time, until the Mongol emperors systematically began to cheat the people out of their property by issuing assignats, and lost the throne in consequence. Government bank-notes have ever since been suspected by the people.

Promissory notes circulate with nearly the same facility as in Europe. Many of the Canton banks confine their transactions to this and the adjoining province of Kwangsi. Some have correspondents in one or two other provinces; and a few only have agents in all the provinces. The provincial capitals are the seats of the most influential banks, but in comparison with European institutions, none of them have as wide a correspondence. There are in some places *banks of loan*, which advance money for short periods, at a daily interest of about half per cent. for periods of at least three days.

The central and provincial authorities employ bankers to make their revenue payments—to receive taxes, to assay the *sycee* received into the treasury, and manage disbursements on public account. Private persons can obtain loans on discount, or letters of credit on other cities, and sell their notes on other banks at a reasonable discount. The managers speculate in gold, silver, and cash, make advances on grain or other crops, and hypothecate their funds on real estate or marine ventures. The institutions are connected with each other for mutual aid or advice, but with all the precautions taken by the depositors, bill-holders, or managers against frauds, the average losses are large. The reported capital of the best bank at Fuhchau is only a million of dollars; and the banks in this city have as good a reputation as any in the empire. Their notes range in value from 300 cash to 1000 taels, though those of 50 taels and upwards are rather promissory notes than bank bills; they are beautifully printed, and stamped with intricate scrolls and elaborate mottoes.

In the northern cities bank bills form a large part of the circulating medium, and have gradually inflated the currency to an extraordinary degree. Their circulation is limited to the neighborhood of the bank, to which they soon return to be exchanged and reissued. In Tientsin there are over 300 banks, which issue notes of demand; the authorities merely require the managers to give a certain amount of security for their solvency. The notes are much smaller than Bank of England notes, and printed on strong coarse mulberry paper; the face bears various cyphers, stamps, and mottoes in red and black ink to prevent counterfeiting. They range in nominal value from 100 up to 10,000 cash and more; but at present are not worth, in exchange for copper, one-half of their face.



SIZE AND DEVICE OF THE TANG-SHIE USED IN PEKING.

The obverse bears the Emperor's reign, Hienfung, with the characters *chien fung* on the sides, meaning "Hienfung's consolidated currency." The reverse gives the name of the coin, *tang-shih*, i. e. "worth ten," with the usual legend in Manchu.

At Peking, the paper money is more abundant than at Tientsin, but the peculiarity of its currency is that the basis is a copper coin like the cut here given, which was forced upon the citizens, and has now no circulation beyond the walls of the capital. This was made of nearly the legal alloy, and each piece was nominally worth ten cash; it nearly weighed that at first, but soon depreciated in weight to about four of the small cash, though still current for ten. However, the people had no choice but to accept it, for the common cash all soon disappeared, and the paper money alone remained; they would not be cheated with the *tang-shih* pieces, and accordingly made the bank notes to correspond with them in nominal value; as the cash deteriorated in size, so did the bank notes rise in exchange, and thus the imperial financiers were completely foiled. At present, the 10-cash coins are reckoned at 20 cash in paper, but only 49 can be procured for a bill of 1000 cash. Since the Allied army came to the city in 1860, Mexican dollars have become well known in the shops, but do not circulate generally. It might be inferred that the rate of exchange between syces and a paper currency based on the *tang-shih* would vary incessantly; in the course of two months in 1862 it ranged from 5900 to 7000 paper cash, or 291 to 343 *tang-shih* for a dollar, but these extremes were unusual. At Peking, Tientsin, and all important towns at the north, the rate of exchange between copper cash, bank notes, and syces, is settled daily by agreement among the bankers.

Nearly allied to the banks are the establishments of *pawnbrokers*, which are very numerous in China. The licensed ones are of three classes. Those which possess large capital and are licensed to grant loans to any amount, are placed under considerable restrictions; they allow three years to redeem, with a grace of three months. These have to pay largely for their licenses, and are also subject to an annual tax. They must give three years' notice of retiring. Inferior pawnbrokers are licensed to allow only two years to redeem. And others again, of a still lower description, may sell off the pawned articles after one year; but freemen are not permitted to open such establishments. Unlicensed pawnbrokers are liable to severe punishment. The length of time which they are compelled to allow for the redemption of pledges is very injurious to them, as the articles must often lose their entire value. If a pawnbroker suffer from theft or from fire originating in his own premises, he is not exonerated from the responsibility of repaying to the pawnee the value of the articles which he had in pawn. When fire is communicated to the pawnbroker's house from a neighbor's, he is required only to make good half the amount of loss. The highest legal rate of interest is three per cent. per month; but in the winter months, it may not exceed two per cent. on raiment, so that the poor may be enabled more easily to redeem. The pawnbrokers issue tickets for the articles they take, which again have a certain value, and are hawked in the streets. These shops offer great temptations to thieves, who can immediately place their plunder on the shelves, and by hiding or destroying the tickets, prevent the right owners recovering their property. The statement which has been sometimes made respecting interest among the Chinese, that it is usually paid during only ten months of the year, appears to have originated in error. One or two months' freedom from paying interest is sometimes allowed as a matter of favor, but we cannot learn that any rule exists on the subject.

The rate of *interest* for ordinary loans depends, in China, as everywhere else, on the risks of property; but nowhere in the empire does it reach the legal limit. At Canton, the rate ranges from 10 to 15 per cent. per annum according to circumstances, and 12 per cent. if no special agreement is made. On loans made on pledges, if a small amount, the legal rate is usually charged; and this usage throughout the empire is pretty uniform, so far as can be learned. On this subject, the translator of the Chinese Penal Code has some remarks, in a note to those sections of Chinese law which come under the head of Usury:—

"In a state of things so unfavorable to the accumulation and transfer of property, there cannot at any time be much floating capital; and the value of that capital, as far as it is denoted by the interest which it is natural to expect, will be high in proportion to its scarcity. In other words, where there are many borrowers and few lenders, and where it forms no part of the system of the government to grant to the former any peculiar degrees of protection or encouragement, it seems a necessary consequence that the latter will both demand and obtain a more than ordinary compensation in return for the use of his property. Trade, therefore, as far as it requires such aid, cannot be so extensively carried on, as it is in those countries, in which there being more available capital, that capital is procurable at a cheaper rate, and accordingly a smaller return of profit found adequate to the charges of commercial adventurers.

"The rate of interest upon a pecuniary loan (quoting the words of Sir George Staunton) must, generally speaking, be influenced by a twofold consideration. Besides what is considered to be strictly equivalent to the advantage arising from the use of the money, the

lender must be supposed in most cases, to receive likewise a certain compensation for the risk to which he exposes his principal. The former consideration will always be limited by, and bear a certain ratio to, the peculiar state and degree of the general prosperity; but the latter can evidently be determined by no rule or proportion, which does not include the consideration of the relative situation and circumstances of the parties interested in the transaction. In England, indeed, where the security of property, and the exclusive rights of individuals are so well understood, and so effectually protected by the laws, it may, in general, be almost as easy to guard against risk, as to compensate for it. But in China, where the laws connected with property are comparatively vague and undefined, and being distinct from the sources of power and influence, are less the law's regard; where, owing to the subdivision of property, there are few great capitalists; and where, also, there is but little individual confidence, except between relatives, who, holding their patrimony in some degree in common, can scarcely be considered as borrowers or lenders in the eye of the law, — it is not so surprising that it should be deemed expedient to license in pecuniary transactions, the insertion of stipulations for very ample interest."

Gold and silver formerly could not legally be exported from China, except in foreign coins, but by the treaties, treasure was made free of all duty. A large amount of silver was, up to 1853, annually taken away to India, in broken dollars and in bullion, but chiefly in the form of *sycee*; this word is a banker's term given to fine silver, because it is like 細絲 *sai-si*, or fine silk; it is also called 紋銀 *wan-yin*, or pure silver. The most common weight of the ingots is ten taels each; their shape resembles a parallelopiped, smooth and flat on the upper, but rather rough and rounded on the lower surface, and bearing a slight resemblance to a Chinese shoe, from whence they are called *shoes* by foreigners. They vary in size from 50 taels' weight down to three mace, and are always stamped with the seals of the assayer and banker in evidence of their purity. The foreign coins gradually lose their integrity by the stamps they receive, and are at last assayed and melted into *sycee*, and thus enter the circulation undistinguished from the native production.

The *fineness* of gold and silver is expressed by dividing the metal into a hundred parts called *touches*. Thus, if an ingot be said to be at 95 touch, it is understood to contain 5 parts of alloy, and 95 parts of pure metal. The fineness of the metals, as thus expressed, may be converted into English proportions by the following analogies. If gold, for instance, be at 91.66 touch, say as $100 : 91.66 :: 12 : 11$, the standard, and *vice versa*; and to convert standard silver into touch, say as $240 : 222 :: 100 : 92.5$, the touch of sterling silver.

TABLE OF CHINESE MONEY WEIGHTS.

Tael.	Mace.	Cand.	Cash.	Dra. av.	Gra. Troy.	Grammes.	Tolas.
1	10	100	1,000	21.33	579.84	37.796	3.23
	1	10	100	2.13	57.984	3.7799	
		1	10	0.213	5.7984	0.378	

Money is never reckoned above taels, and other articles are usually reckoned in decimals when under a tael. The curious resemblance between Chinese weights and English avoirdupois weights, in the single point of 16 taels or ounces making 1 catty or pound, greatly simplifies

the conversion of prices per ounce or tael, when the cost is reckoned in dollars.

The tael is the integer of money weights, and its variations throughout China are less than those of the catty and picul. It does not repay the trouble to search out these discrepancies in a country where local usages are stronger than law, for every merchant will learn them at the port he does business at. An inquiry was made of the bankers at Peking respecting the weight of the tael there, and they furnished the weights used in different transactions. In the capital itself, five kinds of scales are recognized, in each of which the tael differs:—

1st. The market scales 市秤 *shí ching*, used in common transactions, and described "as 4 per cent. lighter than the treasury scales." This tael weighed 548 grains troy.

2d. The Peking scales 京秤 *king ching*, considered to be the same as the last. This tael weighed 541 grains.

3d. The legal scales 公法秤 *kung fah ching*, used in exchanging silver, and described "as $\frac{3}{4}$ per cent. lighter than the treasury scales." This tael weighed 552 grains.

4th. The 2-tael scales 二兩秤 *'rh-liáng ching*, sometimes called the old scales 舊秤 *kiú ching*, used in buying articles, and described "as 6 per cent. lighter than the treasury scales." This tael weighed 539 grains.

5th. The treasury scales 庫秤 *kú ching*, used in taking revenue. This tael weighed 579 grains, or same as the standard recognized at Canton.

Besides these, the bankers at the metropolis recognize a different value for the money tael at the cities of Tung-chau and Tientsin, near them; another at Súcuan, current throughout the province of Kiangsú; and a fourth, called Canton weights 廣司碼 *Kwang ss'ma*, of which there are four rates, respectively indicated by the decimals .995, .996, .997, and .998 of the standard treasury scales at the capital. A Mexican dollar, weighed by different Peking scales, ranged from 6 mace 9 canda. to 8 mace 2 canda.; its current rate is 7 mace. To these diversities in weight, must be added the different touches of sycee, and one gets an idea of the perplexity and confusion connected with the currency throughout the Empire.

It appears from a memorial addressed to the emperor in 1838, that most of the native silver is obtained from mines at Hoshán in Yunnan in the department of Tsiángchau, and at Sungsing on the borders of Cochin-China. These mines are farmed out by the government to overseers, and between forty and fifty thousand workmen are employed in them; the annual produce is not far from two million taels of silver. There are other mines in the empire, not so rich as these two, though probably more productive in the aggregate; but it is impossible even to guess what amount China receives annually from her gold and silver mines.

Section 2.

CHINESE NUMERALS.

THE numerals of the Chinese in the complex, simple, and contracted forms, with their pronunciation in the court, Canton, Shanghai, and Amoy dialects, are as follows:—

	Complex form.	Common.	Contracted form.	Court.	Canton.	Shanghai.	Amoy pronunciation.
1	壹	一	一	yih	yat	ih	ohé.
2	貳	二	二 or 二	'rh	i	'rh	no.
3	叁	三	三 or 三	sán	sám	sá ⁿ	s ⁿ á.
4	肆	四	四	sz'	sz'	sz'	st.
5	伍	五	五	wú	'ng	ú	god.
6	陸	六	六	luh	luk	loh	lák.
7	柒	七	七	ts'ih	ts'at	ts'ih	ch'it.
8	捌	八	八	páh	pát	páh	péh.
9	玖	九	九	kid	kan	kyeu	hiú.
10	拾	十	十	shih	shap	zeh	cháp.
100		百		peh	pák	puh	pék.
1000		千		ts'ien	ts'in	ts'ie ⁿ	ch'eng.
10,000		萬	万	wán	mán	vá ⁿ	bán.

The first three characters in the first column properly denote their respective numbers, but the others are selected from their similarity in form and sound to represent the proper numerals in the second column, and are all used chiefly in bills, promissory notes, and other documents as a security against alterations. The figures in the third column are used in accounts and ordinary papers where less formality and more compactness are wished. The Chinese, like the ancient Greeks, do not reckon above a myriad, but they have, through the Buddhists, learned to use a few characters for the higher numbers, as *yih* 億 for 100,000; *cháu* 兆 for 1,000,000; *king* 京 for 10,000,000; *hái* 垓 for 100,000,000; *ts'í* 秭 for a billion; *yáng* 穰 for ten billions; and even higher than these. Numbers above a myriad are expressed by reproducing those below it, as *sán-peh-wú-shih-yih wán*, *luh wán*, *sán ts'ien*, *ling luh-shih-wú* 三百五十一萬六萬三千零六十五 is 35,163,065. The character *ling* 零, or a circle ○, denotes a cypher; twenty is written 廿 or 廿 *jih*; and 30 is contracted to 卅 *sán*, which are merely 十 *shih* combined twice and thrice; but the common way to express all numbers above ten is by combining the digits and reading them off, as *shih-yih*, 11; *shih-sán*, 13; *sán-shih-yih*, 31; *yih-peh ling rh*, 102; &c.

The decimals are not called tenths, hundredths, &c., as in the Arabic notation, but each progressive place has its own name. The first five places are called

fun 分 a tenth;

sz' 絲 a ten-thousandth;

li 厘 a hundredth;

hwuh 忽 a hundred-thousandth.

hau 毫 a thousandth;

Special characters are used for numerals by particular trades, in order to keep their prices and rates secret, whose value is not known by other persons. The characters of the Thousand Character Classic are not unfrequently used as numerals, beginning 天地玄黃宇宙洪荒 *tien ti hiuen hwang, yü chau hung hwang*, &c., which correspond to 1, 2, 3, &c. The ten stems, 甲乙丙丁 *k'ip yueh ping ting*, &c. are also similarly employed.

In bills and accounts, the character 毫 *hau* is used for dimes by natives at the open ports, and the characters *sz'* 絲 or *sin-sz'* 先絲 for cents; at Canton, *sán ko yin tsien, sz' hau, yih sz'* 三個銀錢 四毫一絲 denotes \$3.41. This usage enables foreigners to understand accounts better, and furthermore obviates the confusion that might ensue by using *fun* and *li* for the decimals of both taels and dollars.

The Chinese use a kind of abacus, called *swán-pán* 算板 or counting-board, in making calculations. It consists of a shallow frame divided into two unequal parts by a bar running lengthwise, through which are inserted parallel wires or sticks, from 9 to 18 or more, according to its uses; on each wire are seven balls, five in the lower compartment, and two (sometimes only one) in the upper. The principle on which calculations are made is decimal, and is simply this:—that a single ball in the lower part being placed against the bar and called unit, is increased towards its left, and decreased on its right, by tens, hundreds, thousands, &c. A ball in the upper division denotes a value five times that of a ball opposite to it in the lower, and the two equal the single ball in the next higher place below the bar. Thus, if opposite to one, it stands for five, and the two balls make 6; if opposite to ten, fifty, and the two balls make 51; and so also, if opposite to a hundredth part, it stands for $\frac{50}{100}$ ths, and the two balls make $\frac{51}{100}$ ths. The machine is an imperfect assistant in doing calculations, though practice makes the Chinese very expert in common sums; it enables them to note the steps in their mental arithmetic, but if the result is doubtful or erroneous, the whole must be reckoned over again.

When writing their numbers, the Chinese follow the order of the balls in the abacus, and accordingly place the figures after each other from left to right in the same order as in the Arabic numerals. For this purpose the contracted forms are used. Thus, 三〇四〇〇 仟

13,209.243; the characters for myriad and thousand being written underneath those places to indicate the highest number of the sum, and thereby rendering it needless further to mark the decimals. The Arabic notation

has been tried in some works on mathematics issued by foreigners; there is no difficulty in thus using the Chinese numerals, but as long as the language is written perpendicularly, they cannot be employed in that way. The Chinese abacus and numerals are both in general use throughout the Chinese-language nations, none of whom have hitherto adopted the Arabic notation.

Section 3.

CHINESE COMMERCIAL WEIGHTS.

THE unit of this table is the *liáng* or tael :—

1	kernel of millet is a 黍 <i>shú</i> ;	
10	<i>shú</i> 黍 make one 兩 <i>lui</i> ;	
10	<i>lui</i> 兩 make one 銖 <i>chú</i> or pearl;	
24	<i>chú</i> 銖 make one 兩 <i>liáng</i> or tael; = $1\frac{1}{2}$ oz. av.	
16	<i>liáng</i> 兩 make one 斤 or 觔 <i>kin</i> or catty; = $1\frac{1}{2}$ lb. av.	
2	<i>kin</i> 斤 make one 引 <i>yín</i> ; = $2\frac{2}{3}$ lbs. av.	
80	<i>kin</i> 斤 make one 鈞 <i>kiun</i> ; = 40 lbs. av.	
100	<i>kin</i> 斤 make one 擔 <i>tán</i> or picul; = $133\frac{1}{3}$ lbs. av.	
120	<i>kin</i> 斤 make one 石 <i>shíh</i> or stone. = 160 lbs. av.	

Of these denominations of weights, the first three and the *yín*, *kiun*, and *shíh*, are nominal, though the last is frequently used as synonymous with a *tán* or picul. Subdivisions of the *liáng* are expressed by the decimals given in the table of money weights on page 274; and so are parts of the catty, when weighing coarse things. The use of the word *tán* for picul is a modern term, and was once confined to Canton; the progress of foreign trade has extended its use to the other ports, and by the recent treaties, its weight in all transactions with foreigners is fixed at $133\frac{1}{3}$ lbs. av.

Chinese weights and grain measures, and the linear, long, and land measures, all vary in different parts of the country; but as a general rule they are the largest and longest in the southern provinces. The *kin* decreases in weight, the *chih* in length, the *mau* in area, and the *tau* in quantity, as one approaches the capital, though exceptions are not uncommon.

1 ton	equals 16 piculs 80 catties.
1 cwt.	„ 84 catties.
1 pound av.	„ $\frac{2}{3}$ of a catty, or 12 taels.
4 ounces av.	„ 3 taels.
1 picul	„ 1.19047 cwt., or 1 cwt. $21\frac{1}{3}$ lbs.
3000 taels	„ 302 pounds troy.

The Chinese use three instruments for weighing, to wit, balances, steelyards, and money-scales. The balance, or *tien ping* 天平 i. e. heaven's level, is made of brass of different sizes; the large ones will

weigh upwards of 200 taels without injury to the pivot; those of smaller size will detect tenths of a grain. The workmanship of the balance is usually very good, and as it is almost exclusively used for weighing gold, silver, jewelry, pearls, bird's-nests, baroos camphor, medicines, and such like valuable articles, the weights and pans are wrought with great accuracy. The weights, called *ss' ma* 司碼 or *ma ts' 碼子*, are made of brass, and shaped somewhat like a dumb-bell.

The steelyards or dotchin (a word derived from *toh-ching* 度秤 to weigh) is made of wood, and is in general use in the markets, shops, and boats; it was known in China in the Chau dynasty, as early as B.C. 1100. The largest size can weigh 6 or 8 piculs; common ones have a beam about 18 inches long, and weigh from a tael up to a picul; the weight is made of brass, iron, or stone. There are usually two hooks for the fulcrum, and each side of the beam is marked to correspond, so that the instrument can weigh more or less, according to the fulcrum used. It is in the hands of every body; no native hardly goes marketing or shopping, without a dotchin to weigh his purchase, and hang it on when bringing it home. At the open ports, Fairbank's scales are coming into use to weigh heavy produce.

The money scales, called *li-tang* 釐戥, are made on the same principle as the dotchin, but weigh only 2 or 3 taels. The beam, 9 or 10 inches long, is made of ivory or horn, and graduated to mills; the thing is put up in portable cases, so that persons can verify their exchanges of silver and copper. The hesitation to trust another man's scale and weights, which prevails among the Chinese, arises partly from a consciousness of the tricks common in all trades, and partly from the want of a common standard throughout the country, so that one can never be sure how much he gets for his money. Moreover, each trade has its own usages in respect of weights, and prices are regulated accordingly.

M. Rondot furnishes many curious data respecting the weights of the tael and catty, showing that they have altered in different periods, and that even now, they present many discrepancies in parts of China remote from each other. In 1769, Père Amiot wrote, "The weight of the *fé* (a certain measure) is 288 modern ounces and 480 ancient; and I have ascertained that 288 modern Chinese ounces equal 320 oz. in our balances." This proportion to the old French ounce gives 0.719 oz. for the ancient tael, and 1.199 oz. for the modern. In 1648, the Government made cubes of gold, silver, copper and lead, each measuring one *tsun*; they were found to weigh—gold, 16.8 taels; silver, 9 taels; copper, 7.5; and lead, 9.9; but the question is, what length was the *tsun*? If that of the Hiá dynasty be taken as the standard, the average weight of the tael would be 0.68 oz.; but as the standard *chih* of the present dynasty is more likely, it would give the weight of the tael at 1.327 ounces avoirdupois.

The expedient of weighing ancient Chinese coins in order to ascertain the value of the catty was tried by Biot, who deduced from them its weight during the Chau dynasty (B. C. 600) to be only 5.85 oz.; during the Han to be 8.9 oz.; increasing under the Tang (A. D. 700) to 19.4 oz., and as high as 22.09 oz. under the Sung. M. Rondot has pursued this examination further than M. Biot was able to do, and gives

the results of weighing a great number of coins. From one of the time of Tein Chi-hwangti, (called *puán liáng* 半兩 i. e. half tael,) he infers the weight of the catty to have been 10.83 oz. In the time of Wang-mang of the Han dynasty, (A. D. 14) it seems to have increased to 11.35 oz., which is almost the same as that given by Amiot a century ago, as the ancient weight of the catty; but some coins of emperors earlier in the same dynasty (B. C. 140), give only 8.83 oz., showing that the emperors of China have resorted to the same means of paying their debts by depreciating the coinage that western monarchs have found convenient. The mean weight of 15 copper coins of the Tang dynasty, gives 21.18 oz. for the catty during three centuries; while the average of 168 cash cast during the Sung dynasty gives as much as 26.11 oz.; or only 24.7 oz., if the mean of 67 coins cast between A. D. 960 to 1031 be taken. The discrepancies, therefore, of weights in various periods of Chinese history, are as great as those of measures and lengths; though the results to be deduced from the weight of ancient coins must be considered uncertain.

It appears that the weight of the tael at Canton in 1710 was 1.32 oz. av.; and in 1770 the E. I. Company's supercargoes agreed with the hong-merchants to fix its weight at $21\frac{1}{2}$ drs. av., the catty at $21\frac{1}{2}$ oz., and the picul at $133\frac{1}{2}$ lbs. This continued to be the standard as long as the Company existed, and became the commercial usage at Canton. It was therefore adopted by the framers of the treaties, and will gradually extend to all ports of the empire. By the Prussian treaty, a picul is made equal to 120 zollpfund, 27 loth, and $1\frac{1}{8}$ quent; or 60 kilogrammes and 453 grammes French.

The difference in the values of the weights above a tael, as fixed by the treaties, and those in common use in China, are as follows:—

	British Treaty.	French Treaty.	Common Weights.
Stone,	159.99 lbs. av.	72.544 kil. or 159.98 lbs. av.	159.11 lbs. av.
Picul,	133.33 "	60.453 " or 133.32 "	132.6 "
Catty,	1.333 "	604.53 grs or 1.332 "	1.326 "
Tael,	1.333 oz. av.	37.783 " or 1.332 oz. av.	1.328 oz. av.

The terms *tan* and *shih* are often indiscriminately applied by the natives among themselves to a large weight of anything, somewhat as the words *load* and *stone* would be among ourselves; and consequently their values vary. At Amoy, brown sugar is sold at 94 *kin*, sugar candy at 95 *kin*, indigo at 110 *kin*, and rice at 140 *kin*, the picul. At Fuhchau, a picul of rice weighs 100 lbs. av. At Shanghai, the largest measure by which rice is sold contains 180 *kin*, yet it is also called a picul. At Tientsin, a *shih* of 360 catties is used only in weighing peas; but a weight of 160 catties of wheat is also called a *shih*. At Niu-chwang, the *shih* of rice and peas weighs 320 catties, though the latter is often only 300 catties; oil and indigo are weighed by a picul of $91\frac{1}{2}$ catties.

M. Rondot furnishes a table of 59 items, giving the weights of the tael and catty at different times and places, and by different trades. The highest values are 1.272 oz. for the tael, and 21.952 oz. for the catty, which is that of 16 taels 3 mace used by Shantung merchants; the lowest is that of Timkowski at Peking, which are respectively 1.129 oz. and 18.064 oz. At Shanghai, the catty was found to contain 16.3 taels,

16 taels, 15.55 taels, 15.41 taels, 14.4 taels, and 13.8 taels, according as it was used by different tradesmen. At Canton, the value of a catty ranges from 14 to 16 taels, but shopkeepers are in the habit of keeping the apparent price per catty the same, and diminishing its weight; there is, however, no deception in this reduction, for the usage has come to be well understood. It imposes upon parties to a contract, however, the constant necessity of settling their standards, and opens the way to continual disputes. At Tientsin, catties of only 12 taels are recognized in some articles; while at Hankau, one sort of catty-weight is used equal to 16 taels 8 mace.

At Macao, the former custom of trading in some articles by three different piculs, severally weighing 100, 111.15, and 150 catties, has altogether gone out of use, and everything is now bought and sold by the same standard as at Canton. The Chinese authorities do not interfere with the usages and short weights of traders, like the Turks and Persians, but allow the evils and tricks in the markets to rectify and neutralize themselves. The people deal in commodities by weight more than is usual in the West, weighing such things as spirits, oil, fire-wood, fowls, cotton cloth, silk, grain, &c.; so that it has been said, "everything at Canton is sold by weight, except eggs and children."

Section 4.

MEASURES OF CAPACITY.

THE unit of this table is the *tau* or peck:—

1	grain of millet is a 粟 <i>suh</i> ;			
6	<i>suh</i>	粟 make one	圭 <i>kwei</i> ;	
10	<i>kwei</i>	圭 make one	撮 <i>tsoh</i>	or pugil;
10	<i>tsoh</i>	撮 make one	抄 <i>cháu</i>	or handful;
10	<i>cháu</i>	抄 make one	勺 <i>choh</i>	or ladle;
5	<i>choh</i>	勺 make one	龠 <i>yoh</i>	or cup;
2	<i>yoh</i>	龠 make one	合 <i>koh</i>	or gill; = 0.103 litre.
10	<i>koh</i>	合 make one	升 <i>shing</i>	or pint; = 1.081 „
10	<i>shing</i>	升 make one	斗 <i>tau</i>	or peck; = 10.81 „
16	<i>tau</i>	斗 make one	庾 <i>yí</i> ;	
5	<i>tau</i>	斗 make one	斛 <i>koh</i> ;	= 51.55 „
2	<i>koh</i>	斛 make one	石 <i>shih</i> ;	= 10.810 „
16	<i>koh</i>	斛 make one	秉 <i>píng</i> ;	
1	<i>fu</i>	釜 is equal to	6 <i>tau</i> 4 <i>shing</i> .	

Of these thirteen measures, only four are in actual use, the others are

now nominal; these four, which are used in retailing rice, peas, and other grains, are the *koh*, *shing*, half *shing*, and *tau*; the first three are usually made in southern China of bamboo joints. The practice of the people of selling almost every article by weight, leads to endless diversity in the size of the measures, inasmuch as the dealers calculate what measure of grain they can afford at so much a picul. The *shing* of rice is commonly reckoned to weigh a catty, but it varies in different places from 12 to 22 taels; at Macao it measures 30.43415 cubic inches, or a trifle less than a pint. The *tau* is made of wood, in shape the frustrum of a pyramid, with a handle across the top. One size called *shí tau* 市斗 or market peck, or *shih-kin tau* 十斤斗, holds just ten catties of dry cleaned rice, and measures 316 cubic *tsun* according to government measure; the *shing* in this proportion measuring 31.6 *tsun* or 1.73 pint (the *chih* estimated at 12.4 inches), and the *tau* 1.63 gallon. But this measure is not very general.

The *tsing tau* 倉斗 or granary peck, is in common use, and holds $6\frac{1}{2}$ catties; it measures 309.57148 cubic inches, or about 1.13 gallon. There is a round tub used containing 13 catties, called sometimes *shwang tau* 雙斗 or double peck. In 1846, M. Rondot measured the *shing* at Canton, and found two which measured 1.72 pint and 0.919 pint, while one obtained at Shanghai held 1.85 pint, and another sent him by Sir John Davis held rather more than this. In 1810, a *shing* of cleaned rice weighed $1\frac{1}{2}$ catty, and a *shing* of paddy 1 catty 1.7 taels, showing that the size was about the same fifty years ago. Dr Medhurst says the ordinary *tau* contains 476.2638 cubic *tsun*; this was perhaps like the double peck of Canton, as it would hold about three gallons. At Shanghai, the *koh* used to measure rice was found by Mr Wylie to hold 2.05 pints, and that by which peas are sold held 1.86 pints; the *shing* measured 1.33 pint, and the half *shing* 0.6 pint.

The dimensions given in official books of 316 cubic *tsun* for the *tau*, proves that the Chinese have attempted to regulate measures by a given standard; if we could ascertain the length of the *tsun*, the capacity of the *tau* would be known. M. Rondot takes the ancient *chih* of the Tang dynasty, and estimates the *shing* to contain 1.815 pint, and the *tau*, 18.15 pints, or 1.13 peck. He notices an interesting coincidence between the measure of the ancient Egyptians called *cadda*, and the *shing* of the Hiá dynasty, each of them being $\frac{1}{100}$ ths of a litre. The *shih* of ten *tau* is now disused altogether, the *shih* being applied to a weight of an uncertain number of catties. In fact, the measures in use throughout China differ so greatly that it is nearly lost labor to ascertain their standards and dimensions; for sales by measures are rather a matter of convenience at any place in order to facilitate sales there by retail. Measures are used in retailing spirits and oil which contain a certain weight; those holding 1, 2, 4, and 8 taels respectively, are the common sizes. Coarse earthen jars holding 15, 30, or 60 catties of these liquids are used by the manufacturers; and are so uniform in size that their contents are sold by measure, though the weight is less than the standard.

Section 5.

MEASURES OF LENGTH.

THE unit of these is the *chih*, usually called a *covid* or *cobre*, or cubit, or Chinese foot. The table begins with kernels of grain, somewhat like the English table, "3 barley corns make one inch;" but the Chinese are not certain what grain was used, nor how it was laid:—

1 <i>lih</i>	粒	or grain is	1 分	<i>fun</i> ;
10 <i>fun</i>	分	make or	1 寸	<i>tsun</i> , a <i>punto</i> or inch;
10 <i>tsun</i>	寸	make	1 尺	<i>chih</i> , a foot or <i>covid</i> ; = 14.1 <i>ins.</i> Eng.
10 <i>chih</i>	尺	make	1 丈	<i>cháng</i> or pole; = 11 <i>ft.</i> 9 <i>ins.</i> „
10 <i>cháng</i>	丈	make	1 引	<i>yin</i> .

The present decimal division of the *chih* was not adopted by the Emperor Hwangti, who divided it into 9 *tsun*, and each *tsun* into 9 *fun*, according to authors who speak of its origin about the year B.C. 2600. The emperor Shun, about B.C. 2284, divided it into 10 *tsun* and 100 *fun*, which was maintained during the three following dynasties; but during the Han, about the time of Christ, the *chih* measured 9 *tsun*, and each *tsun* had 10 *fun*. The Tang restored the decimal arrangement; but the Sung (A.D. 900) went back to the division of 9 *tsun* and 81 *fun*, since which the decimal system has prevailed.

In estimating lengths, decimals are used for parts below a *fun*, and the *chang* is the highest measure for articles. The length of the *chih* has varied in different dynasties, and not a little during the same dynasty. M. Rondot, who has examined this subject with great care and industry, gives the following valuations of it during several dynasties:—*chih* of Hwangti, 10.0592 *ins.*; of the Shang dynasty, 12.541 *ins.*; of the Chau, 8.04739 *ins.*; of the Han, 11.17707 *ins.*; long *chih* of the Tang, 12.58415 *ins.*; short *chih* of the Tang, and that of the Sung, 10.05924 *ins.*; the *cháu-chih* of the Ming, 13.422 *ins.*; the *tong-chih* of the Ming, 12.8754 *ins.*; and the *kioh-chih* of the Ming, 12.58415 *ins.* The ancient books also give the following values to the *chih*:—in the Chau, it was 8.189 *ins.*, 8.8978 *ins.*, and 8.9765 *ins.*; in the Han, it was 9.1734 *ins.*; in the Sung, 10.828 *ins.*; and the official *chih* of the present Tsing dynasty is the same as that of the Shang, 12.58415 *ins.*, equal to 12½ *tsun* of the Hia. The *Hwui-tien* observes, "the ancient *chih* was equivalent to 8 *tsun* of the modern:" but a standard measure received from the officials at Shanghai by Capt. Balfour in 1844 was only 12.5238 *ins.*—so that the standards themselves vary.

Sir H. Pottinger and Kíying in 1842 fixed upon the *chih* in use in the Customs at Canton as the standard, and this has been adopted in the tariff of 1858. It makes the *chih* 14⅞ *in.* English, or 0.3581 metres French; and actually differs very little from the length furnished the English at Amoy in 1734 to measure their ships. It is not unlikely that the use of this *chih* of 14⅞ inches at all the ports will gradually make it the standard throughout the empire. The Prussian treaty makes the *chih* equal to 13 inches 7 lines, or 355 millimetres French; and the *chang* equal to 11 feet, 3 inches, 9 lines Prussian.

The *chih* differs according to the province and the prefecture, the city and the ward, the craft and the usage; a result of the wide expanse of the empire, and the disregard or ignorance of the laws among its people. Some of these are derived from ancient official *chih*, but the majority seem rather to be the caprice of custom in the region where they are found.

The following values of the *chih* at different places will show its variations; they are furnished by M. Rondot.

		<i>inches & dec.</i>
<i>Canton.</i>	Tailor's <i>chih</i> , called <i>pai-tien chih</i> is	14.685
	Mercer's measure for buying wholesale,	14.724 to 14.66
	Do. " for retailing,	14.37 to 14.56
	Merchant's " in 1751 by Torreen,	14.212
	Do. " by Osbeck in 1751,	14.64
	Architect's measure,	12.7
<i>Macao.</i>	Tailor's <i>chih</i> , the <i>pai-tien chih</i> is,	14.685 to 14.64
	Silk mercer's measure,	14.66
	Interior Customs' transit duty measure,	14.586
	Trader's measure for retail,	14.4 to 14.212
	Small dealer's, called <i>kiá-wá chih</i> ,	13.94
	Artisan and mason's,	13.94 to 13.46
	Brazier, joiner, and cooper's,	12.4
<i>Amoy.</i>	Tailor, painter and mercer's,	12.24 to 12.08
	Custom-house measure for junk,	11.832
	Carpenter's measure in 1680 } by Dacres,	11.832
	Goldsmith's " in 1680 }	11.26
	Carver's measure,	11.674
<i>Changchau, near Amoy.</i>	Land measure <i>chih</i> ,	14.035
	Velvet weaver's, or <i>ta chih</i> ,	13.75
	Mercer and cloth-dealer's <i>chang-tsai chih</i> ,	12.24
	Tailor's measure, <i>hiá-tsai chih</i> ,	12.10
	Stonecutter and mason's, <i>lá-pán chih</i> ,	11.795
	Dyer's,	11.674
	Junk builder's,	11.388
	Retailers of cloth and silks,	11.1 to 11
<i>Chikma, between Changchau and Amoy.</i>	Custom-house <i>chih</i> ,	12.71
<i>Fuchau.</i>	The <i>mong-king chih</i> ,	16.85 in.
	Tailor's measure, <i>tsai-fung chih</i> ,	15.0
	The measure called <i>king chih</i> ,	13.7 to 13.4
	Another called <i>kiá chih</i> ,	12.75
	Shoemaker's measure, <i>hwa-tien chih</i> ,	12.5 to 12.24
	Silk dealer's measure,	12.
	Cloth dealer's, called <i>kang-kiáu chih</i> ,	11.93 to 11.83
	Stonecutter's, called <i>lu-ján chih</i> ,	11.83 to 11.79
	The measure called <i>tien chih</i> ,	11.18
	Another called <i>tang-tien chih</i> varies from,	11.55 to 10.748
<i>Chinhai, near Ningpo.</i>	Tailor and trader's,	13.7
	Artisan's measure, called <i>Fuá-kien i-chih</i> ,	12.44
	Stonecutter's, or <i>lá-ján chih</i> ,	10.9
<i>Ningpo.</i>	Rule called <i>ta-yih-tsun chih</i> (11 <i>tsun</i>),	15.079
	Another called <i>ta-wu-fun chih</i> (10 $\frac{1}{2}$ <i>tsun</i>),	14.37
	Tailor's rule, <i>tsai-fung chih</i> , { 1846,	14.098
	{ 1858,	13.75
	Fur, cloth, and felt dealers,	13.92 to 13.7
	Silk dealer's, <i>shi-chang mái-mái chih</i> the market <i>chih</i> ,	13.75
	Common rule, the <i>kuán-tsai chih</i> ,	13.7
	Statute rule in customs, or <i>pú-pán chih</i> ,	12.7
	Shipbuilder's rule,	11.93
	Stonecutter's rule, <i>lá-pán chih</i> ,	10.99 to 10.95
	Carpenter's rule,	9.92

	<i>inches & dec.</i>
<i>Tientsin.</i> Traders and tailors' rule,	13.7
Joiner's rule,	10.9
Mason's rule,	10.63
<i>Shanghai.</i> Junk-builder's rule, <i>Trungming t-chih</i> ,	15.769 to 15.69
Custom-house, or <i>Haitsoan chih</i> ,	14.098
Tailor's rule, <i>Shanghai t-tsai chih</i> ,	14.05 to 13.85
Land measure rule of Board of Revenue,	13.181
Artisan's rule, or <i>Fukien t-chih</i> , (8 <i>tsun</i>)	12.569
Carpenter's rule,	11.14
Mason's rule, <i>ts-pen chih</i> , (7 <i>tsun</i>)	11.09 to 10.9
<i>Nanking.</i> Trader's rule (by Clerc)	13.957
<i>Nanchang</i> , in Kiangsu. Trader's rule,	14.45
<i>Tientsin.</i> Carpenter's common measure,	12.35
Mercer's silk and cloth measure,	13.7
<i>Peking.</i> Tailor's rule in southern part of city,	13.58
Traders in silks,	13.46
Tailors in northern part of city,	13.42
Du Halde gives the tailor's rule at	13.216
Tribunal of Mathematics by missionaries,	13.118
Land surveyor's rule, <i>liang-ti chih</i> ,	12.875
Common foot measure,	12.68
Registrar of lands,	12.593
Architects, traders, &c.,	12.586
Measure of the palace,	12.468
Measure of <i>chih</i> in Imperial Statistics,	12.40
Board of Public Works, in Imperial Statistics,	12.34
Rule used in works of the palace,	12.17
<i>Shanghai.</i> Rule used by tailors,	14.55
<i>Kiaohas tribes.</i> Rule used among traders,	14.66
<i>Maimaichin.</i> Rule for purchases,	13.976
Rule used in sales to Mongols,	13.779
Rule given by Russians (1824),	13.203
<i>Manila.</i> Chinese carpenter's rule,	13.818

In each of these places there is one measure which takes the precedence as approaching the standard, but their extreme differences range more than six inches. The *chih* measures are usually made of bamboo, and no one will be surprised at their inequalities who watches their manufacture. Shopkeepers usually keep two sticks on their counters, varying 2 to 4 lines, and even more; the shorter for retail, the longer for wholesale; they rate the cloth at the same price per *chih*, but measuring by the longer gives a profit, when selling by the shorter, of 3 to 6 per cent. This usage is very general and well understood.

By the Commercial Regulations, an English yard is fixed at 2 *chih* 5 *tsun*, 5.5 *fun*, by making the *chih* to be 14 $\frac{1}{10}$ inches. But a yard at Canton is reckoned at 2 *chih* 4 *tsun*, and at Shanghai at 2 *chih* 5 *tsun*, differences corresponding to the values of the *chih*. The treaties fix the *chang* at 141 inches, or 3 $\frac{1}{2}$ *yds.*, but its actual length depends on the *chih* used as the unit. Thus, its length by the tariff is 141 inches; by the *pai-tsun chih* of Canton it is 146 $\frac{1}{2}$ inches; at Amoy, 121 inches; at Fuhchau, by the *kang-kiáu chih*, 118 $\frac{1}{2}$ inches; at Ningpo, by the *kwán-tsai chih*, 137 inches; and at Shanghai, it varies from 139 to 125 inches. At Peking, Tientsin, and elsewhere in the north of China, the carpenter's and mercer's foot measures of 12.35 *ins.* and 13.7 *ins.*, are the two in common use. It is a pity that the progress of foreign trade in China should tend to introduce the perplexing, immethodical, arbitrary system of British weights and measures, rather than the scientific French decimal system.

ITINERARY MEASURES.

The Chinese table of measures for long distances is:—

Half a <i>tsun</i> or inch	寸	is called one	厘 <i>lí</i> ;
5 <i>tsun</i>	寸	make one	分
5 <i>chih</i>	尺	make one	步 <i>pú</i> , or pace;
360 <i>pú</i>	步	or paces make one	里 <i>lí</i> , or mile;
250 <i>lí</i>	里	make one	度 <i>du</i> , or degree.

A degree is also divided into 60 分 *fun* or minutes, and each *fun* into 60 秒 *siu* or seconds. At Canton, 10 *lí* make one *táng-sun* 塘汛 or league, also called *yat pú lí* 一部路, at which intervals guard-houses should be placed.

Formerly 6 *chih* made a *pú*, 2 *pú* made a *cháng*, 144 *cháng* made a *lí*, and 192½ *lí* made a degree; this makes a *lí* equal to 1894.12 feet English, and 2.787 *lí* to one mile. Estimating the degree at this rate, it is exactly 1728 *chih* of 13.18 inches, which is now the common rule used in measuring land, and differs very little from that of 13.118 *ins.* given by the early missionaries as the measure of the Mathematical Board. When the *pú* was reduced to 5 *chih*, 2 *pú* still made a *cháng*, but the *lí* contained 180 *cháng* instead of 144, or 1800 *chih* instead of 1728. Estimating 1894.12 feet to a *lí*, makes the *chih* worth 12.626 inches, which is nearly the same as that given by Le Comte as the one used by the Board at Peking.

When about to survey the empire in 1700, the missionaries agreed upon the *chih* used by Kanghi in the palace; and Régis informs us that "according to this *chih* a degree had been found by Parennin to contain 200 *lí*, each measuring 180 *cháng* of 10 *chih*." This *chih* was worth 12.1 inches, and the *lí* measured 1821.15 feet. The common foot rule at Amoy has this value of 12.1 inches.

Afterwards the present rate of 250 *lí* to a degree was adopted in order to make it one-tenth of a French league, and $\frac{1}{10}$ of a degree, and this scale is found on the charts of D'Anville. The following table shows the value of the *chih* and *lí* in a degree, at the three estimates of 192½ *lí*, 200 *lí*, and 250 *lí*:—

192½ <i>lí</i>	1 <i>lí</i> = 144 <i>cháng</i> , or 1894.12 ft. or of 180 <i>cháng</i> = 1894.12 ft.
to a	1 <i>cháng</i> = 2 <i>pú</i> 13.153 ft. or of 2 <i>pú</i> = 10.522 ft.
degree	1 <i>pú</i> = 6 <i>chih</i> , 6.576 ft. or of 5 <i>chih</i> = 5.261 ft.
	1 <i>chih</i> = 10 <i>tsun</i> , = 13.18 in. or of 10 <i>tsun</i> = 12.626 <i>ins.</i>
200 <i>lí</i>	1 <i>lí</i> = 180 <i>cháng</i> or 1895 ft. || 250 <i>lí</i> 180 <i>cháng</i> or 1458.53 ft.
	1 <i>cháng</i> = 2 <i>pú</i> or 10.128 ft. || 2 <i>pú</i> or 8.1 ft.
	1 <i>pú</i> = 5 <i>chih</i> or 5.064 ft. || 5 <i>chih</i> or 4.05 ft.
	1 <i>chih</i> = 10 <i>tsun</i> or 12.1 <i>ins.</i> || 10 <i>tsun</i> or 9 72 <i>ins.</i>

These tables indicate the confusion existing in the country as to the value of the *lí* in reckoning ordinary distances. The valuations of 192½ or 200 *lí* to a degree make it longer than the usual rate, but it is impossible to find anything like a standard at any place. If a native is asked the length of a *lí*, he is very likely to answer, "as far as a man's voice can be heard." M. Rondot is of opinion that the ancient *lí* (about 315 to a degree) measured 353 metres, or 1158.2 ft.; and that the

modern *li* (251 to a degree) measures 442 metres, or 1428.2 feet. The first will equal 1728 *chih* of the Chau dynasty, and the second 1800 *chih* of the Hia and Sung. Some authors have endeavored to assign an Assyrian or Egyptian origin to the Chinese *chih* and *li*, but when the *chih* in different parts of the country, and in different ages, has varied from about 8 inches to over 16 inches in length, and the *li* from 1158 feet to 1894 feet, the evidences for such comparisons rest on very imperfect bases.

Section 6.

CHINESE LAND MEASURE.

THE unit of this table is the *mau*; estimating the *chih* at 13.126 inches, the values are annexed:—

5 <i>chih</i>	尺	make one	步 <i>pú</i> , or 弓 <i>kung</i> , a bow;	= 30.3234 sq. feet.
24 <i>pú</i>	步	make one	分 <i>fun</i> ;	
60 <i>pú</i>	步	make one	角 <i>kioh</i> , or horn;	= 202.156sq. yards.
4 <i>kioh</i>	角	make one	畝 <i>mau</i> , or Chinese acre;	= 26.73 sq. poles
100 <i>mau</i>	畝	make one	頃 <i>king</i> ;	= 16.7 acres.

Lands are generally reckoned by the *king* and *mau*, below which decimals are used. At Canton, the *tsing* 井 of 100 square *pái-t sien chih*, (equal to 149.756 sq. feet) is much employed in measuring small parcels of land; 60 of these, or 6000 square *chih*, make a *mau*, at which rate 4.847 *mau* equal an English acre. The district magistrate of Nanhai at Canton furnished a measure to the British Consulate in 1848, which gave 4.871 *mau* to acre.

One of these land measures was also compared at Tsienshan near Macao, and found to contain 16.924 sq. yards which makes 4.766 *mau* equal to an acre. This rate obtains throughout most parts of the prefecture of Kwangchau, and makes the measurements of the *mau* larger than they are further north.

The following estimates have been collected by M. Rondot:—M. Sai-gey reckoned 6.586 *mau* to make an acre; Edward Biot, 7.205 to an acre; M. Pauthier, 6.08, and afterwards 6.79 to an acre; and the Chinese Repository, 6.61 to an acre. The measure of the English Consulate at Shanghai is derived from a *pú* rule sent in by the prefect, which was found to measure 65.9 inches; by this estimate, the *mau* is almost exactly one-sixth of an English acre. This last measure, it is not unlikely, may gradually become the standard of land measure.

At Changchau fú near Amoy, M. Rondot found that the *chih* used in land measure was 14.036 *ins.*—a standard that makes 5.31 *mau* equal to an acre. This estimate corresponds with the still larger area of 4.847 or 4.766 *mau* to an acre current at Canton, in about the same proportion to the longer *chih* used at the latter place. The average over the whole country gives from 6 to 6.1 *mau* to an acre, which makes the *chih* measure about 13.216 inches, that of the Board of Mathematics. Whether the rate of taxation corresponds to the different areas of the *mau* at the north and south, has not been ascertained.

In the Han dynasty, 6 *ch'ih* made a *pé*; 100 *pé* made a *mau*; 100 *mau* made a 夫 *fú*; and 8 *fú* made an 屋 *uk*; but their various values, depending as they did, on the length of the *ch'ih*, are to be estimated by that. Near the capital, the *mau* is estimated at 240 *pé*, and an acre contains rather more than 6 *mau*. The *king* is not much used, except in books; parts of a *mau* are represented by decimals. The land tax varies from 100 *ü* up to 2 *tsien* per *mau* for cultivated land, but the rate is so small throughout the empire as to be nearly nominal, in comparison to the rates in Europe. An annual tax of 1500 cash per *mau* is paid at Shanghai and Tientsin to the Chinese government upon lands sold to foreigners.

Section 7.

CHINESE DIVISIONS OF TIME.

THE cycle of sixty years is the foundation of the Chinese chronology, and its application to the years, months, and days has done much to preserve their historical records from confusion. According to the received account, the Celestial Sovereign invented two series of characters, one of 12 branches 十二枝 *shih-rä ch'í*, and the other of 10 stems 十干 *shih kan*. The twelve branches are likewise called 地枝 *ti ch'í*, or terrestrial branches, and each one is supposed to be connected with a different animal, which is named upon them as here given; and these same animals again have some mysterious influence upon persons born in the hour over which they rule. The Mongols, Japanese, Siamese, and Annamese apply the same animals to the same sign. The twelve zodiacal signs, which comprise in twelve equal spaces the 28 *kung* or houses through which the moon travels in her monthly course along the ecliptic, are also named after the branches:—

Branch		Animal	Corresponds to the Constellation
1 子 <i>ts'ü</i>	is represented by <i>shü</i>	鼠 a rat;	Aries.
2 丑 <i>chau</i>	" by <i>nüi</i>	牛 an ox;	Taurus.
3 寅 <i>jün</i>	" by <i>hü</i>	虎 a tiger;	Gemini.
4 卯 <i>mau</i>	" by <i>tü</i>	兔 a hare;	Cancer.
5 辰 <i>shin</i>	" by <i>kung</i>	龍 a dragon;	Leo.
6 巳 <i>si'</i>	" by <i>shie'</i>	蛇 a snake;	Virgo.
7 午 <i>wü</i>	" by <i>má</i>	馬 a horse;	Libra.
8 未 <i>wü</i>	" by <i>yáng</i>	羊 a ram;	Scorpio.
9 申 <i>shin</i>	" by <i>kau</i>	猴 a monkey;	Sagittarius.
10 酉 <i>yü</i>	" by <i>ki</i>	雞 a cock;	Capricorn.
11 戌 <i>shü</i>	" by <i>kiuen</i>	犬 a dog;	Aquarius.
12 亥 <i>hái</i>	" by <i>chü</i>	猪 a boar;	Pisces.

The twelve branches are used to designate the twelve hours of the day, which begins at 11 o'clock P.M., and are on this account usually

known as horary characters; they also indicate the twelve points of the Chinese compass, as follows:—

11 to 1	A.M.	(三 更 3d watch)	is 子 or N.
1 — 3	"	(四 更 4th watch)	is 丑 or N.N.E. $\frac{1}{4}$ E.
3 — 5	"	(五 更 5th watch)	is 寅 or E.N.E. $\frac{1}{4}$ N.
5 — 7	"	- - - - -	is 卯 or E.
7 — 9	"	- - - - -	- is 辰 or E.S.E. $\frac{1}{4}$ E.
9 — 1	"	(上 午 forenoon)	is 巳 or S.S.E. $\frac{1}{4}$ E.
11 to 1	P.M.	(正 午 noon)	is 午 or S.
1 — 3	"	(下 午 afternoon)	is 未 or S.S.W. $\frac{1}{4}$ W.
3 — 5	"	- - - - -	is 申 or W.S.W. $\frac{1}{4}$ S.
5 — 7	"	- - - - -	- is 酉 or W.
7 — 9	"	(初 更 1st watch)	is 戌 or W.N.W. $\frac{1}{4}$ N.
9 — 11	"	(二 更 2d watch)	is 亥 or N.N.W. $\frac{1}{4}$ W.

To express European hours, it is enough to add 交 *kiau* and 正 *ching* to the characters; thus 正子 *ching-tz* is midnight, 交丑 *kiau chau* is 1 o'clock A.M. and so throughout; but these when mentioned are more usually numbered in imitation of the foreign mode, which has become widely known through the use of watches. A table for the convenience of natives, to show the correspondence of the foreign hours is often inserted in their almanacs.

The ten stems are also called 天干 *tien kan*, or heavenly stems; they are sometimes named and described after the five elements, according to the peculiar philosophy of the dual powers current among the Chinese, each element being exhibited in its *yin* and *yang* state, corresponding to its passive and active condition. Each of them is regarded as destroying its predecessor, and producing its successor, in a perpetual round.

- | | | | |
|----|---------------|--------------------|------------------------------------|
| 1 | 甲 <i>kia</i> | is allied to wood, | and represented by a growing tree; |
| 2 | 乙 <i>yueh</i> | " " | " by hewn timber; |
| 3 | 丙 <i>ping</i> | " fire, | " by lightning; |
| 4 | 丁 <i>ting</i> | " " | " by burning incense; |
| 5 | 戊 <i>wu</i> | " earth, | " by hills; |
| 6 | 己 <i>ki</i> | " " | " by earthenware; |
| 7 | 庚 <i>kang</i> | " metal, | " by ore; |
| 8 | 辛 <i>sin</i> | " " | " by kettles; |
| 9 | 壬 <i>jin</i> | " water, | " by salt water; |
| 10 | 癸 <i>tsai</i> | " " | " by spring water. |

Chinese records further state that in the 61st year of the reign of Hwangti, or the Yellow Emperor, Nau the Great was commanded by his sovereign to combine these two series, and form a cycle to denote

the years; he did so, by taking *kiah*, the first of the ten, and joining it to *tsz*, the first of the twelve, to denote the first year of the cycle *kiah-ts'*. The second characters of each series were then joined to form *yueh chaw*, and so on; going through the ten stems six times, and the twelve branches five times, as shown in the table. This was in the year B.C. 2637. The corresponding years of the Christian era are given for the 75th and 76th cycles.

TABLE OF THE SEXAGENARY CYCLE.

甲子 1804 1864	甲戌 1814 1874	甲申 1824 1884	甲午 1834 1894	甲辰 1844 1904	甲寅 1854 1914
乙丑 1805 1865	乙亥 1815 1875	乙酉 1825 1885	乙未 1835 1895	乙巳 1845 1905	乙卯 1855 1915
丙寅 1806 1866	丙子 1816 1876	丙戌 1826 1886	丙申 1836 1896	丙午 1846 1906	丙辰 1856 1916
丁卯 1807 1867	丁丑 1817 1877	丁亥 1827 1887	丁酉 1837 1897	丁未 1847 1907	丁巳 1857 1917
戊辰 1808 1868	戊寅 1818 1878	戊子 1828 1888	戊戌 1838 1898	戊申 1848 1908	戊午 1858 1917
己巳 1809 1869	己卯 1819 1879	己丑 1829 1889	己亥 1839 1899	己酉 1849 1909	己未 1859 1919
庚午 1810 1870	庚辰 1820 1880	庚寅 1830 1890	庚子 1840 1900	庚戌 1850 1910	庚申 1860 1920
辛未 1811 1871	辛巳 1821 1881	辛卯 1831 1891	辛丑 1841 1901	辛亥 1851 1911	辛酉 1861 1921
壬申 1812 1872	壬午 1822 1882	壬辰 1832 1892	壬寅 1842 1902	壬子 1853 1912	壬戌 1862 1922
癸酉 1813 1873	癸未 1823 1883	癸巳 1833 1893	癸卯 1843 1903	癸丑 1853 1913	癸亥 1863 1923

The Chinese have never kept up a serial numbering of the cycles, and have no longer chronological period than 60 years. Some native authors begin the reckoning with the first year of Hwangti's reign, B.C. 2697, making 76 cycles at the end of A.D. 1863; De Guignes follows this calculation; but Chinese chronologers mostly take the later date of B.C. 2637, which makes the 75th cycle and the 4500th year of their annals to end with 1863. The year B.C. 2637 is placed by Hales as 518 years after the deluge, and about 80 years before the confusion of tongues. Some again begin their chronology with the first year of the 3th cycle, in the reign of Yau, B.C. 2277; Père Regis adopts this date.

In writing the year in official documents, foreigners usually use the cyclic characters to denote it, so as not to acknowledge the Emperor; but the people designate the year by the reign of his Majesty, sometimes adding the cyclic characters; 甲子同治二年二月十五日 *kiahts' Tungchi's 2d year, 2d moon, 15th day*, stands for April 2d, 1863. The cyclic characters are also applied to the months and days of the year in a separate but continuous series for each. These are always given in common almanacs.

TIME TABLE.

15 <i>fun</i> 分 or minutes	make	1 刻 <i>keh</i> , or quarter of 15 minutes;
8 <i>keh</i> or quarters	"	1 時辰 <i>shí shin</i> , or hour;
96 <i>keh</i> or quarters	}	1 日 <i>jih</i> , or 晝夜 <i>chau yé</i> , a day;
12 <i>shí shin</i> or hours		
10 days	"	1 旬 <i>sun</i> , or decade;
29 or 30 days	"	1 月 <i>yueh</i> , or moon;
12 or 13 moons	"	1 年 <i>nien</i> , or year;
60 years	make	1 六十花甲 <i>luh-shih huó k'ieh</i> , or cycle.

A second is called 秒 *miáu*, of which 60 make a 分 *fun*, but these terms are derived from European sources. The wide use of clocks and watches has introduced the terms 點鐘 *tien-chung*, "stroke of the clock," for the hour; and 面厘 *mien-li* for minute. The days of a month are always numbered consecutively from 1 to 29 or 30; the first ten days are called 初一, 初二, *tsú yih, tsú 'rh*, &c. The months are numbered from 1 to 12, except the first, which is called 正月 *ching yueh*; an intercalary month is denoted by prefixing 閏 *jun* to the preceding number, as 閏六月 i. e. intercalated sixth month. A month of 29 days is called 小月 *siáu yueh*, and of 30 days 大月 *tá yueh*, the lesser and greater months; a year of 12 months contains 354 days, the intercalated year has 384 days. The four seasons are called 春夏秋冬 *chun, hiá, tsíu, tung*—spring commencing with newyear. They are also denoted by 24 節氣 *tsieh kí*, or 節令 *tsieh ling*, periods corresponding to the day on which the sun enters the first and fifteenth degree of one of the zodiacal signs; consequently their places in a lunar calendar will change every year, but in the solar year of Europeans they fall nearly upon the same day in successive years. When an intercalary month occurs, they are still reckoned as usual; but the intercalation is made so that only one term shall fall in it. The equinoxes and solstices, and some of the festivals, are regulated by the *tsieh kí*. Some of them contain 14, and others 16 days, but their average length is 15 days. Their names and approximate positions in our year are here given; one or another of them change a day back or forth from year to year, and do not regularly fall on the same day.

TWENTY-FOUR SOLAR TERMS.

Feb.	5	<i>k'ih chun</i>	立春	spring begins;	Sun in Aquarius.
Feb.	19	<i>yu shuwei</i>	雨水	rain and water;	} in Pisces.
March	5	<i>k'ing ch'ih</i>	驚蟄	excited insects;	
March	20	<i>chun fen</i>	春分	vernal equinox;	} in Aries.
April	5	<i>tsing ming</i>	清明	clear bright;	
April	20	<i>k'ieh yu</i>	穀雨	grain rain;	} in Taurus.
May	5	<i>k'ih hiá</i>	立夏	summer begins;	
May	21	<i>siáu muan</i>	小滿	grain filling;	} in Gemini.
June	6	<i>máng chung</i>	芒種	grain in ear;	
June	21	<i>hiá chí</i>	夏至	summer solstice;	} in Cancer.
July	7	<i>siáu shu</i>	小暑	little heat;	
July	23	<i>ta shu</i>	大暑	great heat;	} in Leo.
August	7	<i>l'ih tsai</i>	立秋	autumn begins;	
August	23	<i>chú shí</i>	處暑	limit of heat;	} in Virgo.
Sep.	8	<i>peh lu</i>	白露	white dew;	
Sep.	23	<i>tsui fan</i>	秋分	autumnal equinox;	} in Libra.
Oct.	8	<i>han lu</i>	寒露	cold dew;	
Oct.	23	<i>shueing k'ing</i>	霜降	frost descending;	} in Scorpio.
Nov.	7	<i>k'ih tung</i>	立冬	winter begins;	
Nov.	22	<i>siáu siueh</i>	小雪	little snow;	} in Sagittarius.
Dec.	7	<i>ta siueh</i>	大雪	great snow;	
Dec.	22	<i>tung chí</i>	冬至	winter solstice;	} in Capricorn.
Jan.	6	<i>siáu han</i>	小寒	little cold;	
Jan.	21	<i>ta han</i>	大寒	great cold;	Sun enters Aquarius.

The days and months are also continuously denoted by the names of the 28 *kung* 宮 houses, or constellations, which are as follows:—*

1 角 K'ieh	8 斗 Tau	15 奎 Kwei	22 井 Tsing
2 亢 Káng	9 牛 Niú	16 婁 Lú	23 鬼 Kwei
3 氏 T'í	10 女 Nü	17 胃 Wei	24 柳 Liú
4 房 Fáng	11 虛 Hsü	18 昂 Máu	25 星 Sing
5 心 Shin	12 危 Wei	19 畢 Peih	26 張 Cháng
6 尾 Wei	13 室 Shih	20 觜 Tsz'	27 翼 Yih
7 箕 Kí	14 壁 Peih	21 參 Tsán	28 轸 Chin

* These characters are applied in regular order to the days of the month. Four of them (those printed in Italics) always mark the Christian Sabbath, while the others designate the week days respectively.

Chinese Cycles, with the year of their commencement.

Cycle No.	R.O. Cycle No.	Cycle No.	R.O. Cycle No.	Cycle No.	R.O. Cycle No.	A.D. Cycle No.	A.D.		
1 begins	2637	17 begins	1677	32 begins	777	47 begins	124	62 begins	1024
2 "	2577	18 "	1617	33 "	717	48 "	184	63 "	1084
3 "	2517	19 "	1557	34 "	657	49 "	244	64 "	1144
4 "	2457	20 "	1497	35 "	597	50 "	304	65 "	1204
5 "	2397	21 "	1437	36 "	537	51 "	364	66 "	1264
6 "	2337	22 "	1377	37 "	477	52 "	424	67 "	1324
7 "	2277	23 "	1317	38 "	417	53 "	484	68 "	1384
8 "	2217	24 "	1257	39 "	357	54 "	544	69 "	1444
9 "	2157	25 "	1197	40 "	297	55 "	604	70 "	1504
10 "	2097	26 "	1137	41 "	237	56 "	664	71 "	1564
11 "	2037	27 "	1077	42 "	177	57 "	724	72 "	1624
12 "	1977	28 "	1017	43 "	117	58 "	784	73 "	1684
13 "	1917	29 "	957	44 "	57	59 "	844	74 "	1744
14 "	1857	30 "	897	45 "	A.D. 460	60 "	904	75 "	1804
15 "	1797	31 "	837	46 "	64	61 "	964	76 "	1864
16 "	1737								

Comparison of Christian and Chinese Years:

This table shows what year of the last Chinese cycle corresponds to the Christian year, and in the next column the current year in the reign of the emperor which answers to it: *Kia.* stands for Kiating; *Tau.* for Taukwang; *Hien.* for Hienfung; and *Tung.* for Tung-chi, the reigning monarch. The figures placed after some of the months show which month of that year was intercalated.

Year.	Cycle.	Reign.	Commenced.	Year.	Cycle.	Reign.	Commenced.	Year.	Cycle.	Reign.	Commenced.
1797	54	1	28th Jan	1821	18	1 Tau.	2d Feb	1845	42	25	7th Feb
1798	55	2	16th Feb	1822	19	2	23d Jan	1846	43	26	27th Jan
1799	56	3	5th Feb	1823	20	3	10th Feb	1847	44	27	14th Feb
1800	57	4	25th Jan	1824	21	4	31st Jan	1848	45	28	5th Feb
1801	58	5	13th Feb	1825	22	5	17th Feb	1849	46	29	24th Jan
1802	59	6	3d Feb	1826	23	6	7th Feb	1850	47	30	12th Feb
1803	60	7	23d Jan	1827	24	7	27th Jan	1851	48	1 Hien	1st Feb
1804	1	8	11th Feb	1828	25	8	15th Feb	1852	49	2	20th Feb
1805	2	9	31st Jan	1829	26	9	4th Feb	1853	50	3	8th Feb
1806	3	10	19th Feb	1830	27	10	24th Jan	1854	51	4	29th Jan
1807	4	11	8th Feb	1831	28	11	11th Feb	1855	52	5	17th Feb
1808	5	12	29th Jan	1832	29	12	1st Feb	1856	53	6	6th Feb
1809	6	13	16th Feb	1833	30	13	20th Feb	1857	54	7	26th Jan
1810	7	14	6th Feb	1834	31	14	8th Feb	1858	55	8	14th Feb
1811	8	15	27th Jan	1835	32	15	29th Jan	1859	56	9	3d Feb
1812	9	16	15th Feb	1836	33	16	17th Feb	1860	57	10	23d Jan
1813	10	17	3d Feb	1837	34	17	5th Feb	1861	58	11	10th Feb
1814	11	18	21st Feb	1838	35	18	26th Jan	1862	59	12	30th Jan
1815	12	19	10th Feb	1839	36	19	14th Feb	1863	60	2 Hien	18th Feb
1816	13	20	30th Jan	1840	37	20	3d Feb	1864	1	3	7th Feb
1817	14	21	17th Feb	1841	38	21	20th Feb	1865	2	4	26th Jan
1818	15	22	6th Feb	1842	39	22	10th Feb	1866	3	5	14th Feb
1819	16	23	27th Jan	1843	40	23	30th Jan	1867	4	6	3d Feb
1820	17	24	13th Feb	1844	41	24	18th Feb	1868	5	7	23d Jan

Comparison of Dates in Chinese and Christian Years.

The object of this table is to assist those who wish to ascertain the corresponding dates in the Chinese and Christian years for 18 years past.

1847	Tung 27th	1848	Tung 28th	1849	Tung 29th	1850	Tung 30th	1851	Hien 1st	1852	Hien 2d
				Jan 24	1			Feb 1	1		
Feb 15	1	Feb 5	1	Feb 23	2	Feb 12	1	Mar 3	2	Feb 20	1
Mar 17	2	Mar 5	2	Mar 24	3	Mar 14	2	Apr 2	3	Mar 21	2
Apr 15	3	Apr 4	3	Apr 22	4	Apr 12	3	May 1	4	Apr 19	3
May 14	4	May 3	4	May 22	Int	May 12	4	May 31	5	May 19	4
Jun 13	5	June 1	5	Jun 20	5	Jun 10	5	Jun 29	6	Jun 18	5
July 12	6	July 1	6	July 20	6	July 9	6	July 28	7	July 17	6
Aug 11	7	July 31	7	Aug 18	7	Aug 8	7	Aug 27	8	Aug 15	7
Sep 9	8	Aug 30	8	Sep 17	8	Sep 6	8	Sep 25	Int	Sep 14	8
Oct 9	9	Sep 28	9	Oct 16	9	Oct 5	9	Oct 24	9	Oct 13	9
Nov 8	10	Oct 28	10	Nov 15	10	Nov 4	10	Nov 23	10	Nov 12	10
Dec 8	11	Nov 27	11	Dec 14	11	Dec 4	11	Dec 22	11	Dec 11	11
Jan 6	12	Dec 26	12	Jan 13	12	Jan 2	12	Jan 21	12	Jan 9	12

1853	Hien 3d	1854	Hien 4th	1855	Hien 5th	1856	Hien 6th	1857	Hien 7th	1858	Hien 8th
		Jan 29	1					Jan 26	1		
Feb 8	1	Feb 27	2	Feb 17	1	Feb 6	1	Feb 24	2	Feb 14	1
Mar 10	2	Mar 29	3	Mar 18	2	Mar 7	2	Mar 26	3	Mar 15	2
Apr 8	3	Apr 27	4	Apr 16	3	Apr 5	3	Apr 24	4	Apr 14	3
May 8	4	May 27	5	May 16	4	May 4	4	May 23	5	May 13	4
June 7	5	Jun 25	6	Jun 14	5	June 3	5	Jun 22	Int	Jun 11	5
July 6	6	July 25	7	July 14	6	July 2	6	July 21	6	July 11	6
Aug 3	7	Aug 24	Int	Aug 13	7	Aug 1	7	Aug 20	7	Aug 9	7
Sep 3	8	Sep 22	8	Sep 11	8	Aug 30	8	Sep 18	8	Sep 7	8
Oct 3	9	Oct 22	9	Oct 11	9	Sep 29	9	Oct 18	9	Oct 7	9
Nov 1	10	Nov 20	10	Nov 10	10	Oct 29	10	Nov 16	10	Nov 6	10
Dec 1	11	Dec 20	11	Dec 9	11	Nov 28	11	Dec 16	11	Dec 5	11
Dec 30	12	Jan 19	12	Jan 8	12	Dec 27	12	Jan 15	12	Jan 4	12

1859	Hien 9th	1860	Hien 10th	1861	Hien 11th	1862	Tung 1st	1863	Tung 2d	1864	Tung 3d
		Jan 23	1			Jan 30	1				
Feb 3	1	Feb 22	2	Feb 10	1	Mar 1	2	Feb 18	1	Feb 7	1
Mar 5	2	Mar 22	3	Mar 11	2	Mar 30	3	Mar 19	2	Mar 8	2
Apr 3	3	Apr 21	Int	Apr 10	3	Apr 29	4	Apr 18	3	Apr 6	3
May 3	4	May 21	4	May 10	4	May 28	5	May 18	4	May 6	4
June 1	5	Jun 19	5	June 8	5	Jun 27	6	Jun 16	5	June 4	5
Jun 30	6	July 18	6	July 8	6	July 27	7	July 16	6	July 4	6
July 30	7	Aug 17	7	Aug 6	7	Aug 25	8	Aug 14	7	Aug 2	7
Aug 28	8	Sep 15	8	Sep 5	8	Sep 24	Int	Sep 13	8	Sep 1	8
Sep 26	9	Oct 14	9	Oct 4	9	Oct 23	9	Oct 13	9	Oct 1	9
Oct 26	10	Nov 13	10	Nov 3	10	Nov 22	10	Nov 11	10	Oct 30	10
Nov 24	11	Dec 12	11	Dec 2	11	Dec 21	11	Dec 11	11	Nov 29	11
Dec 24	12	Jan 11	12	Dec 31	12	Jan 19	12	Jan 9	12	Dec 29	12

CHAPTER VI.

WESTERN MONEYS, WEIGHTS, &c.

Section 1.

ANNAMITESE MONEYS, &c.

THE coins of Annam or Cochinchina are gold and silver taels,—the former being usually fourteen or fifteen times the value of the latter,—and *dong*, or cash, shaped like the Chinese, and made of zinc. The precious metals are scarce among the people, and most transactions are carried on by means of the cash, which is very inconvenient, owing to its brittleness and great weight.

The gold and silver used by the Annamese is generally refined, but sometimes much alloyed. The golden ingot, or *loaf* as it is called, is the largest; there is a half ingot of gold of the same shape, of 5 taels' weight, worth 277 rupees, or about 698 francs, 40 cent. The *dinh vang*, or golden nail, weighs one tael, and is worth 138 fr. or 53½ rupees. A silver ingot of the same form as the *loaf*, called *nen bac*, weighs 10 taels; it is an oblong piece of silver, worth 32 Co.'s rupees, or \$14, or 81 fr. 57 cent. There is another piece of silver money, called *dinh bac*, or nail, weighing one tael, worth about 8 fr. 15 cent., or 3½ rupees; this has its subdivisional halves and quarters; the half is called *una dinh bac*. The golden *loaf* of 10 or 5 taels equals \$238 or \$119; the golden *dinh vang* of 1, ½ or ¼ tael weight, equals \$24, \$12 or \$6; the silver *dinh bac* of 1, ½ or ¼ tael weight, equals \$1.40, \$0.70, or \$0.35.

Besides these more strictly native coins, king Minh-menb issued a coinage of dollars about 1830, the pieces of which were intended to be of the same weight as the Spanish dollar; but in general it is not worth more than 1½ of a rupee (4 francs) or about 70 cents, from the great adulteration of the metal, one third of it being copper. His successor Thieu-fri coined both gold and silver dollars, having a dragon on one side and his name on the reverse. The whole, half, and quarter gold dollars, are worth \$12, \$6½, and \$3½ respectively; the same denominations of silver are worth \$0.70, \$0.35 and \$0.17. The workmanship of all these gold and silver coins is highly creditable.

The copper coinage is cast; 60 *dong* or cash make 1 *mot tien*, or heap; and 10 *mot tien* make 1 *kwan* or string of 600 cash, which are estimated between 50 and 60 cents, and weigh about 3½ lbs. av. The rates of exchange between cash and the silver coins vary from three to six *kwan* to a dollar. On the average, 2600 zinc cash are equal to a Spanish dollar, and 600 to 25 cents. These rates existed ten years ago, but the exchange latterly has diminished, and the use of silver has increased.

The earliest silver and gold coins were shaped like cakes of Indian ink, but much thinner. They have slightly raised edges, and their value and date are marked on them in raised characters. At every new issue

the coins previously current lose several per cent. of their value. This custom is extremely inconvenient, particularly to foreigners, who are unable to read the characters which are stamped on them.

The *weights* in Annam, although bearing the same name, are heavier than in China. They are:—

10 ai or atoms	}	1 tran;	equal to .000003905 grammes
10 tran		1 huy;	.000003905
10 huy		1 chau;	.00003905
10 chau		1 hot, in Chinese <i>houk</i> ;	.0003905
10 hot		1 hao, do. <i>hau</i> ;	.008905
10 hao		1 li, do. <i>li</i> ;	.03905
10 li		1 phan, do. <i>fan</i> ;	.3905
10 phan		1 dong, do. <i>tien</i> ;	3.905
10 dong or mao		1 luong, do. <i>liang</i> ;	39.05
10 luong or taels		1 nen;	390.5
16 luong		1 can, do. <i>bin</i> ;	624.8
10 can or catty		1 yen;	6.248 kilograms
50 can		1 binh;	31.24
100 can		1 ta; do. <i>tan</i> ;	62.48
500 can		1 quan.	312.4

The *luong* weighs about $1\frac{1}{4}$ oz., but the *can* is 1 lb. 6 oz. 10 grs. av.

Measures of grain vary in every province, and purchasers always agree beforehand what measures shall be used. The *hao* is 28 litres, or about $\frac{1}{4}$ of a bushel, 2 of which make a *shita* or *tao*.

Land measures bear the same proportion to each other as in China, but are larger, on the whole. The *thuoc* (cubit, chih, or foot) contains 18 French inches, or 19.12 inches English; it is also used by and carpenters.

10 li	}	1 phan, in Chinese <i>fan</i> ;	equal to .0048726 metres
10 phan		1 tac, do. <i>tsun</i> ;	.048726
10 tac		1 thuoc, do. <i>chih</i> ;	.48726
5 thuoc		1 ngu or perch;	2.4363
3 ngu		1 sao or rod;	7.3089
10 sao		1 mau, in Chinese <i>mau</i> ;	73.089

By another perch of $16\frac{1}{2}$ *thuoc*, by which land is measured, 10 *sao* in a *mau* or Chinese acre, makes it 80.3979 metres.

Long measures. The Annamese ell or *thouc* \mathcal{R} , used only for measuring cloths and silks, contains $25\frac{1}{2}$ inches English. There are six values to the *thuoc*, varying from 0.405 to 0.64068 metres, or 16 inches to 25.4 inches.

10 phan	}	1 tac (<i>tsun</i>);	equal to .064968 metres.
10 tac		1 thouc (<i>chih</i>);	= .64968
10 thouc		1 trong (<i>chang</i>);	= 6.4968 or 21 $\frac{1}{4}$ feet Eng.
30 thouc		1 cai vai, or that;	19.4904
10 cai vai		1 quo.	194.904

The *li* is $\frac{1}{10}$ th of the common French league, 25 to a degree, or 444.39 metres, equal to 1458 feet English. A *dam* or stadium is two *li*, or 888 metres; 5 *dam* make 1 league.

The trade of Annam has been confined to native vessels during the past century, which have visited Canton, Hainan I., Siam, Singapore, and intermediate places. Several attempts have been made to open commercial relations with the authorities by foreign nations, but the want of enterprise among the natives has proved a greater obstacle to trade than the restrictions of their rulers.

Section 2.

PORT OF SAIGON.

THE conquest of part of the kingdom of Annam by the French, and opening of the port of Saigon by their authorities, are so recent that only a few notices and regulations can be inserted. The country under their sway is fertile, but the people are indolent, and their wants few; so that nothing can be definitely calculated as to the amount of commerce likely to arise, or the commodities which will chiefly form it. Rice, gamboge, sugar, rhinoceros' horns, and other articles, found in the markets of Bangkok, are most of them products of Annam also; and the Meikong River, which disembogues below Saigon, drains a much larger basin than the Meinam. The town lies about sixty miles from Cape St James, and the passage up to it is deep and safe for all craft. This port was visited in 1819 by Lieut. John White U.S.N., with two small vessels, the "Franklin" and "Marmion," for the purpose of buying sugar, in which he succeeded to some extent; he has left a very pleasant narrative of his voyage.

Harbor regulations have been issued by the French officials:—

Modifications au Droit d'Anorage du Port de Saigon.

Conformément à la décision de S. E. le Ministre de la Marine en date du 9 Novembre dernier, le règlement du port de Saigon subira les modifications suivantes, savoir:—

1°.—Le droit d'anorage à percevoir sur les navires arrivant au port est réduit à trois francs, soit une demi-piastre.

2°.—Les navires arrivés surleat, qui auront fait, et qui ne feront dans le port aucun opération commerciale; ceux qui y entreront en relâche forcée; enfin, ceux qui venus surleat n'auront chargé qui des produits du pays, seront exempts de droit d'anorage.

3°.—Une navire est réputé surleat lorsqu'il n'a à son bord aucun marchandises ayant payé un fret, ou pouvant donner lieu à une opération commerciale quelconque. L'opium sera considéré comme marchandise.

4°.—Les navires de commerce Français sont affranchis de tout droit; la même faveur est accordée aux navires portant la pavillon de S. M. Catholique.

5°.—Les présentes modifications auront leur plein effet à compter du 23 Janvier.

Toutes les prescriptions antérieures relatives au droit d'anorage sont et demeureront abrogées.

Saigon, Janvier 23, 1861.

T. DARIEZ.

The charge for pilotage is \$3 per foot; and light-dues are 3 cents per register ton. Port-dues are fixed at half-a-dollar per register ton, chargeable on all vessels entering the port with cargo, except ships under French or Spanish colors and vessels in distress. Opium pays a duty of ten per cent. *ad valorem*; all other goods enter and leave free of duty.

The currency at Saigon is to be assimilated to the French currency, but the Mexican dollar and Annamese zinc cash, or *safques*, now constitute the circulating medium. The former are taken by the government at the exchange of 5.37 francs per dollar. The cash are reckoned by *ligatures* or strings of 600 cash each, and the exchange varies from 3200 to 3500 cash per dollar. Gold bullion passes current in large transactions for \$23 to \$24½ per tael. Rice is at present the chief article of trade, and can be obtained to an almost unlimited extent. From the opening of the port of Saigon up to August 1860, a period of about twenty months, 90,000 tons had been exported.

Section 3.

TREATY WITH SIAM, MONEYS, &c.

THE death of Phra Nang Klow, the king of Siam, in 1851, and the accession of his brother Phra Paramendr Maha Mongkut were important events in the national history. The old seclusive régime, under which the treaties with Great Britain and the United States had been neutralized, was changed for a more liberal policy towards foreign nations, and the commencement of reforms for the improvement of the people. The purchase of foreign ships, and building native vessels on better models, has enlarged the mercantile navy of Siam, whose flag now appears in all the open ports of China as well as elsewhere in Asia, and developed the resources of the people. The liberal policy of the new king led to a renewed attempt to open diplomatic relations, which were favorably received; the British treaty was signed April 18th, 1865; the American treaty, May 29th, 1856; and subsequently others with France, Portugal, and other European nations, all on the same basis. The British treaty contains the rules under which trade in Siam is conducted with all nations, and is inserted in full.

TREATY OF FRIENDSHIP AND COMMERCE BETWEEN GREAT
BRITAIN AND SIAM.

Her Majesty the Queen of the United Kingdom of Great Britain and Ireland and all its dependencies, and their Majesties Phra Bard Somdetch Phra Paramendr Maha Mongkut Phra Chom Klau Chau Yu Hua, the first King of Siam, and Phra Bard Somdetch Phra Pawarendr Ramear Mahiswarear Phra Pin Klau Chau Yu Hua, the second King of Siam, desiring to establish, upon firm and lasting foundations, the relations of peace and friendship existing between the two countries, and to secure the best interests of their respective subjects, by encouraging, facilitating, and regulating their industry and trade, have resolved to conclude a Treaty of amity and commerce for this purpose, and have therefore named as their Plenipotentiaries; that is to say,

Her Majesty the Queen of Great Britain and Ireland, Sir John Bowring, Knight, Doctor of Laws, &c., &c;

And their Majesties the first and second Kings of Siam, his Royal Highness Krom Hloang Wongsa Dhiraj Snidh; his Excellency Somdetch Chau Phaya Param Maha Puyurawongse; his Excellency Somdetch Chau Phaya Param Maha Bijel-neate; his Excellency Chau Phaya Sri Suriwongse Samuha Phra Kralahom; and his Excellency Chau Phaya, acting Phra-klang;

Who, after having communicated to each other their respective full powers, and found them to be in good and due form, have agreed upon and concluded the following Articles:—

ART. I.—There shall henceforward be perpetual peace and friendship between her Majesty the Queen of Great Britain and Ireland and her successors, and their Majesties the first and second Kings of Siam and their successors. All British subjects coming to Siam shall receive from the Siamese government full protection and assistance to enable them to reside in Siam in all security, and trade with every facility, free from oppression or injury on the part of the Siamese. And all Siamese subjects going to an English country shall receive from the British government the same complete protection and assistance that shall be granted to British subjects by the government of Siam.

ART. II.—The interests of all British subjects coming to Siam shall be placed under the regulation and control of a consul, who will be appointed to reside at Bangkok. He will himself conform to, and will enforce the observance by British subjects of all the provisions of this Treaty, and such of the former Treaty negotiated by Captain Burney in 1836, as shall still remain in operation. He shall also give effect to all rules or regulations that are

now or may hereafter be enacted for the government of British subjects in Siam, the conduct of their trade, and for the prevention of violations of the laws of Siam. Any disputes arising between British and Siamese subjects shall be heard and determined by the consul, in conjunction with the proper Siamese officers; and criminal offenses will be punished, in the case of English offenders, by the consul, according to English laws; and in the case of Siamese offenders, by their own laws, through the Siamese authorities. But the consul shall not interfere in any matters referring solely to Siamese, neither will the Siamese authorities interfere in questions which only concern the subjects of Her Britannic Majesty.

It is understood, however, that the arrival of the British consul at Bangkok shall not take place before the ratification of this Treaty, nor until ten vessels owned by British subjects, sailing under British colors and with British papers, shall have entered the port of Bangkok for the purposes of trade, subsequent to the signing of this Treaty.

ART. III.—If Siamese, in the employ of British subjects, offend against the laws of their country, or if any Siamese having so offended, or desiring to desert, take refuge with a British subject in Siam, they shall be searched for, and upon proof of their guilt or desertion, shall be delivered up by the consul to the Siamese authorities. In like manner, any British offenders, resident or trading in Siam, who may desert, escape to, or hide themselves in Siamese territory, shall be apprehended and delivered over to the British consul on his requisition. Chinese, not able to prove themselves to be British subjects, shall not be considered as such by the British consul, nor be entitled to his protection.

ART. IV.—British subjects are permitted to trade freely in all seaports of Siam, but may reside permanently only at Bangkok, or within the limits assigned by this Treaty. British subjects coming to reside at Bangkok may rent land and buy or build houses, but cannot purchase lands within a circuit of two hundred ~~acres~~ (not more than four miles English) from the city walls, until they shall have lived in Siam for ten years, or shall obtain special authority from the Siamese government to enable them to do so. But with exception of this limitation, British residents in Siam may at any time buy or rent houses, lands, or plantations, situated anywhere within a distance of twenty-four hours' journey from the city of Bangkok, to be computed by the rate at which boats of the country can travel. In order to obtain possession of such lands or houses, it will be necessary that the British subject shall, in the first place, make application through the consul to the proper Siamese officer, and the Siamese officer and the consul, having satisfied themselves of the honest intentions of the applicant, will assist him in settling, upon equitable terms, the amount of purchase money, will mark out and fix the boundaries of the property, and will convey the same to the British purchaser under sealed deeds. Whereupon he and his property shall be placed under the protection of the governor of the district, and that of the particular local authorities; he shall conform in ordinary matters to any just directions given him by them, and will be subject to the same taxation that is levied on Siamese subjects. But if, through negligence, the want of capital, or other cause, a British subject should fail to commence the cultivation or improvement of the lands so acquired within a term of three years from the date of receiving possession thereof, the Siamese government shall have the power of resuming the property, upon returning to the British subject the purchase money paid by him for the same.

ART. V.—All British subjects intending to reside in Siam shall be registered at the British Consulate. They shall not go out to sea, nor proceed beyond the limits assigned by this Treaty for the residence of British subjects, without a passport from the Siamese authorities, to be applied for by the British consul, nor shall they leave Siam, if the Siamese authorities show to the British consul that legitimate objections exist to their quitting the country. But within the limits appointed under the preceding article, British subjects are at liberty to travel to and fro, under the protection of a pass, to be furnished them by the British consul, and counter-sealed by the proper Siamese officer, stating, in the Siamese character, their names, calling, and description. The Siamese officers at the government stations in the interior, may, at any time, call for the production of this pass; and immediately on its being exhibited, they must allow the parties to proceed; but it will be their duty to detain those persons who, by traveling without a pass from the consul, render themselves liable to the suspicion of their being deserters; and such detention shall be immediately reported to the consul.

ART. VI.—All British subjects visiting or residing in Siam shall be allowed the free exercise of the Christian religion, and liberty to build churches in such localities as shall be consented to by the Siamese authorities. The Siamese government will place no restrictions upon the employment by the English of Siamese subjects as servants, or in any other

capacity. But whenever a Siamese subject belongs or owes service to some particular master, the servant who engages himself to a British subject without the consent of his master, may be reclaimed by him, and the Siamese government will not enforce an agreement between a British subject and any Siamese in his employ, unless made with the knowledge and consent of the master, who has a right to dispose of the service of the person engaged.

ART. VII.—British ships-of-war may enter the river and anchor at Paknam, but they shall not proceed above Paknam, unless with the consent of the Siamese authorities, which shall be given when it is necessary that a ship shall go into dock for repairs. Any British ship-of-war conveying to Siam a public functionary, accredited by her Majesty's Government to the Court of Bangkok, shall be allowed to come up to Bangkok, but shall not pass the forts called Pong-Pachamit and Pit-Pachanuck, unless expressly permitted to do so by the Siamese government. But in the absence of a British ship-of-war, the Siamese authorities engage to furnish the consul with a force sufficient to enable him to give effect to his authority over British subjects, and to enforce discipline among British shipping.

ART. VIII.—The measurement duty hitherto paid by British vessels trading to Bangkok under the Treaty of 1826, shall be abolished from the date of this Treaty coming into operation; and British shipping or trade will thenceforth be only subject to the payment of import and export duties on the goods landed or shipped.

On all articles of Import, the duty shall be three per cent., payable at the option of the importer, either in kind or money, calculated upon the market value of the goods. Draw-back of the full amount of duty shall be allowed upon goods found unseizable and re-exported. Should the British merchant and the custom-house officers disagree as to the value to be set upon the imported articles, such disputes shall be referred to the consul and a proper Siamese officer, who shall each have the power to call in an equal number of merchants as assessors, not exceeding two on either side, to assist them in coming to an equitable decision.

Opium may be imported free of duty, but can only be sold to the opium farmer or his agents. In the event of no arrangement being effected with them for the sale of the opium, it shall be re-exported, and no impost or duty shall be levied thereon. Any infringement of this regulation shall subject the opium to seizure and confiscation.

Articles of Export, from the time of production to the date of shipment, shall pay one impost only, whether this be levied under the name of inland tax, transit duty, or duty on exportation. The tax or duty to be paid on each article of Siamese produce, previous to or upon exportation, is specified in the tariff attached to this Treaty; and it is distinctly agreed, that goods or produce which pay any description of tax in the interior shall be exempted from any further payment of duty on exportation. English merchants are to be allowed to purchase direct from the producer the articles in which they trade, and in like manner to sell their goods directly to the parties wishing to purchase the same, without the interference in either case of any other person.

The rates of duty laid down in the tariff attached to this Treaty are those that are now paid upon goods or produce shipped in Siamese or Chinese vessels or junks; and it is agreed that British shipping shall enjoy all the privileges now exercised by, or which hereafter may be granted to Siamese or Chinese vessels or junks.

British subjects will be allowed to build ships in Siam, on obtaining permission to do so from the Siamese authorities.

Whenever a scarcity may be apprehended of salt, rice, and fish, the Siamese government reserve to themselves the right of prohibiting, by public proclamation, the exportation of these articles.

Bullion or personal effects may be imported or exported, free of charge.

ART. IX.—The Code of Regulations appended to this Treaty shall be enforced by the consul with the coöperation of the Siamese authorities, and they, the said authorities and consul, shall be enabled to introduce any further regulations which may be found necessary in order to give effect to the objects of this Treaty.

All fines and penalties inflicted for infraction of the provisions and regulations of this Treaty, shall be paid to the Siamese government.

Until the British consul shall arrive at Bangkok and enter upon his functions, the consignees of British vessels shall be at liberty to settle with the Siamese authorities all questions relating to their trade.

ART. X.—The British government and its subjects will be allowed free and equal participation in any privileges that may have been, or may hereafter be granted by the Siamese government to the government or subjects of any other nation.

ART. XI.—After the lapse of ten years from the date of the ratification of this Treaty, upon the desire of either the British or Siamese Government, and on twelve months' notice given by either party, the present, and such portions of the Treaty of 1826 as remain unrevoked by this Treaty, together with the Tariff and Regulations thereunto annexed, or those that may hereafter be introduced, shall be subject to revision by commissioners appointed on both sides for this purpose, who will be empowered to decide on and insert therein such amendments as experience shall prove to be desirable.

ART. XII.—This Treaty, executed in English and Siamese, both versions having the same meaning and intention, and the ratifications thereof having been previously exchanged, shall take effect from the 6th day of April in the year 1856 of the Christian era, corresponding to the 1st day of the 5th month of the 1218th year of the Siamese civil era.

In witness whereof, the abovesigned Plenipotentiaries have signed and sealed the present Treaty in quadruplicate, at Bangkok, on the 18th day of April, in the year 1855 of the Christian era, corresponding to the 2d day of the 6th month of the 1217th year of the Siamese civil era.

[L.S.]

JOHN BOWRING.

*Signatures and Seals
of the five Siamese Plenipotentiaries.*

GENERAL REGULATIONS

Under which British Trade is to be conducted in Siam.

I.—The master of every English ship coming to Bangkok to trade, must, either before or after entering the river, as may be found convenient, report the arrival of his vessel at the custom-house at Paknam, together with the number of his crew, and the port from whence he comes. Upon anchoring his vessel at Paknam, he will deliver into the custody of the custom-house officers all his guns and ammunition, and a custom-house officer will then be appointed to the vessel, and will proceed in her to Bangkok.

II.—A vessel passing Paknam without discharging her guns and ammunition as directed in the foregoing regulation, will be sent back to Paknam to comply with its provisions, and will be fined eight hundred ticals for having so disobeyed. After delivery of her guns and ammunition, she will be permitted to return to Bangkok to trade.

III.—When a British vessel shall have cast anchor at Bangkok, the master, unless a Sunday should intervene, will, within four-and-twenty hours after arrival, proceed to the British Consulate, and deposit there his ship's papers, bills of lading, &c., together with a true manifest of his import cargo; and upon the consul's reporting these particulars to the custom-house, permission to break bulk will at once be given by the latter.

For neglecting to report his arrival, or for presenting a false manifest, the master will subject himself, in each instance, to a penalty of four hundred ticals; but he will be allowed to correct, within twenty-four hours after delivery of it to the Consul, any mistake he may discover in his manifest, without incurring the abovementioned penalty.

IV.—A British vessel breaking bulk and commencing to discharge, before the permission shall be obtained, or smuggling, either when in the river or outside the Bar, shall be subject to the penalty of eight hundred ticals, and confiscation of the goods so smuggled or discharged.

V.—As soon as a British vessel shall have discharged her cargo and completed her outward lading, paid all her duties, and delivered a true manifest of her outward cargo to the British consul, a Siamese port-clearance shall be granted her on application from the consul, who, in the absence of any legal impediment to her departure, will then return to the master his ship's papers, and allow the vessel to leave. A custom-house officer will accompany the vessel to Paknam, and on arriving there, she will be inspected by the customs' officers of that station, and will receive from them the guns and ammunition previously delivered into their charge.

VI.—Her Britannic Majesty's Plenipotentiary, having no knowledge of the Siamese language, the Siamese government have agreed that the English text of these Regulations, together with the Treaty of which they form a portion, and the Tariff hereunto annexed, shall be accepted as conveying in every respect their true meaning and intention.

[L.S.]

JOHN BOWRING.

*Signatures and Seals
of the five Siamese Plenipotentiaries.*

TARIFF OF EXPORT AND INLAND DUTIES

to be levied on articles of trade.

SEC. I.—The undermentioned articles shall be entirely free from inland or other taxes on production or transit, and shall pay export duty as follows:—

	<i>Tael. Selling. Puang.</i>		<i>Tael. Selling. Puang.</i>
1 Ivory,	10 0 0	26 Gum Benjamin,	4 0 0 p picul.
2 Gamboge,	6 0 0	27 Angrai Bark,	0 2 0 "
3 Rhinoceros' horns,	50 0 0	28 Agila Wood,	2 0 0 "
4 Cardamoma, best,	14 0 0	29 Ray Skins,	3 0 0 "
5 Do. bastard,	6 0 0	30 Old Deer's Horns,	0 1 0 "
6 Dried Musella,	1 0 0	31 Soft or young Horns,	10 p cent.
7 Pelicans' Quills,	2 2 0	32 Deer Hides, fine,	8 0 0 " 100
8 Betel Nut, dried,	1 0 0	33 Do. common,	3 0 0 "
9 Krachi Wood,	0 2 0	34 Deer Sinews,	4 0 0 p picul.
10 Shark's Fins, white,	6 0 0	35 Buffalo & Cow Hides,	1 0 0 "
11 Do. black,	3 0 0	36 Elephants' Bones,	1 0 0 "
12 Luckrabau Seed,	0 2 0	37 Tigers' Bones,	5 0 0 "
13 Peacock's Tails,	10 0 0	38 Buffalo Horns,	0 1 0 "
14 Buffalo & Cow Bones,	0 0 0 1/2	39 Elephants' Hides,	0 1 0 "
15 Rhinoceros' Hides,	0 2 0	40 Tigers' Skins,	0 1 0 p skin.
16 Hide Cuttings,	0 1 0	41 Armadillo Skins,	4 0 0 p picul.
17 Turtle Shells,	1 0 0	42 Sticklac,	1 1 0 "
18 Do. soft,	1 0 0	43 Hemp,	1 2 0 "
19 Bicho de Mar,	3 0 0	44 Dried Fish, <i>Plakeng</i> ,	1 2 0 "
20 Fishmaws,	3 0 0	45 Do. <i>Plusalit</i> ,	1 0 0 "
21 Birds-nests, uncleaned,	20 p cent.	46 Sapan-wood,	0 2 1 "
22 Kingfishers' Feathers,	6 0 0	47 Salt Meat,	2 0 0 "
23 Cutch,	0 2 0	48 Mangrove Bark,	0 1 0 "
24 Beyche Seed (<i>Nus</i> <i>Vomica</i>)	0 2 0	49 Rose-wood,	0 2 0 "
25 Pungtarai Seed,	0 2 0	50 Ebony,	1 1 0 "
		51 Rice,	4 0 0 p koyan.

SEC. II.—The undermentioned articles, being subject to the inland or transit duties herein named, and which shall not be increased, shall be exempt from export duty:—

52 Sugar, white,	0 2 0	58 Dried Prawns,	one-twelfth.
53 Do. red,	0 1 0	59 Tilseed,	"
54 Cotton, clean and uncleaned,	10 per cent.	60 Silk, raw,	"
55 Pepper,	1 0 0	61 Bees-wax,	one-fifteenth.
56 Salt Fish, <i>Platu</i> ,	1 0 0 per 10,000	62 Tallow,	1 0 0 p picul.
57 Beans and Peas,	one-twelfth.	63 Salt,	6 0 0 " koyan.
		64 Tobacco,	1 2 0 1000 bds

SEC. III.—All goods or produce, unenumerated in this Tariff, shall be free of export duty, and shall only be subject to one inland tax or transit duty, not exceeding the rate now paid.

[L.S.]

JOHN BOWRING.

Signatures and Seals of the five Siamese Plenipotentiaries.

A supplementary Agreement consisting of twelve articles was signed May 13, 1856, between officers appointed on the part of each government, and now has the same force as the treaty itself. These stipulations are here abridged.

ART. I.—Provides that the authorities of the two countries shall not be responsible for the debts of insolvent or absconding debtors, though

they shall take all the steps they can for the recovery of the property. British subjects are allowed to participate in the overland trade to Siam from Mergui, Pegu, Tavoy, Ye, Tennaserim, or other places, on condition that they shall be provided with proper certificates for each journey. British merchants importing fire-arms, shot and gunpowder, must sell the articles to government alone, or re-export the whole stock. Native boats taking cargo out to the British ships at the Bar must each pay a tax of 8 ticals 2 salungs.

ART. II.—Defines and enlarges Art. II. of the preceding treaty relating to the settlement of disputes; and provides,—that in all civil and criminal cases, the authorities of the nation to whom the defendant belongs shall have exclusive jurisdiction; in all cases, a British subject must make his complaints against a Siamese through his own consul; and in all cases where the parties belong to both nations, the authorities of both shall have the right to attend and listen to the investigation of the case.

ART. III.—Explains the IVth article of the Treaty, by stipulating that a British subject may sell his real estate in Siam to any person; and if he dies in the country, his estate shall go to his legal heirs, and its management be under the control of the British consul on their account.

ART. IV.—Furnishes, in an annexed schedule, a list of the taxes to be paid by a British subject, on his lands in Siam; and adds, "That, beside the land tax, and the import and export duties, mentioned in the aforesaid articles, no additional charge or tax of any kind may be imposed upon a British subject, unless it obtain the sanction both of the supreme Siamese authorities and the British consul."

ART. V.—Stipulates that passports for traveling into the interior, port-clearances for ships, and passes for cargo-boats, shall be issued within 24 hours after formal application has been made; and the first two without any charge.

ART. VI.—Defines the stipulation in Art. VIII. of the Treaty respecting the prohibition for good causes of the export of salt, rice and fish, by limiting it to the existence of war or rebellion, or of a dearth from any natural cause. If a British merchant has purchased rice before the proclamation of non-exportation is issued, he may obtain the royal permission and ship it, but not otherwise. The export duty on paddy is fixed at 2 ticals per coyan.

ART. VII.—Defines what is the meaning of bullion in the VIIIth article of the Treaty, by limiting foreign coins, gold and silver in bars or ingots, and gold leaf, to bullion that can be imported free; while plated-ware, manufactured articles in gold and silver, and diamonds or other precious stones, must pay an import duty of 3 per cent.

ART. VIII.—Provides for the immediate establishment of a custom-house, and that its business "shall be conducted under the regulations annexed to this agreement."

ART. IX.—Allows the Siamese government to impose a single tax or duty on any article not now subject to a public charge of any kind.

ART. X.—Mentions that the limits of the circuit of 200 *sen* or 4 miles, around Bangkok, stated in Art. IV. of the Treaty, within which British subjects cannot freely purchase lands, have been marked by pillars:—on the North, one *sen* north of wat Kemabherataram; on the

East, 6 *sen* 7 fathoms southwest of wat Bangkapi; on the South, about 19 *sen* south of the village Bangpakio; on the West, about 2 *sen* southwest of the village of Bangphrom. Pillars have also been placed to show where the circuit line crosses the river below Bangkok.

ART. XI.—Defines the limits of the 24 hours' journey mentioned in Art. IV. of the Treaty, within which British merchants may buy or rent houses, to be:—

“On the North: The Bangputsa canal from its mouth on the Chau Phya river to the old city walls of Lobpuri, and a straight line from Lobpuri to the landing-place of Tha Phrangam, near to the town of Saraburi on the river Pasak. *On the East:* A straight line drawn from the landing-place of Tha Phrangam to the junction of the Klongkut canal with the Bangpakong river; the Bangpakong river from the junction of the Klongkut canal to its mouth; and the coast from the mouth of the Bangpakong river to the isle of Sri-maharajah, to such distance inland as can be reached within 24 hours' journey from Bangkok. *On the South:* The isle Sri-maharajah and the islands of Se-chang on the east side of the Gulf, and the city walls of Petchaburi on the west side. *On the West:* The western coast of the Gulf to the mouth of the Meklong river to such a distance inland as can be reached within 24 hours' journey from Bangkok; the Meklong river from its mouth to the city walls of Rajpuri; a straight line from the city walls of Rajpuri to the town of Suphanapuri; and a straight line thence to the mouth of the Bangputsa canal on the Chau Phya river.”

ART. XII.—Provides for the incorporation of the articles of this agreement in the Treaty of April 18th, 1855.

[L.S.]

HARRY S. PARKES.

Signatures and Seals of the five Siamese Commissioners.

CUSTOM-HOUSE REGULATIONS.

1. At the custom-house built at Bangkok near the anchorage, officers must be in attendance between 9 A.M. and 3 P.M. The business of the custom-house shall be carried on between those hours. The tidewaiters, required to superintend the landing or shipment of goods, will remain in waiting for that purpose from daylight until dark.

2. Subordinate custom-house officers shall be appointed to each ship; their number shall not be limited, and they may remain on board the vessel or in boats alongside. The custom-house officers appointed to the vessels outside the Bar will have the option of residing on board the ships, or of accompanying the cargo-boats on their passage to and from.

3. The landing, shipment, or transshipment of goods may be carried on only between sunrise and sunset.

4. All cargo landed or shipped shall be examined and passed by the custom-house officers within twelve hours of daylight after the receipt at the custom-house of the proper application. The manner in which such application and examination is to be made shall be settled by the consul and superintendent of customs.

5. Duties may be paid by the merchants in ticals, foreign coins, or bullion, the relative values of which will be settled by the consul and the proper Siamese officers. The Siamese will appoint whomever they may please to receive payment of the duties.

6. The receiver of duties may take from the merchants 2 salungs per catty of 80 ticals for testing the money paid to him as duties; and for each stamped receipt given by him for duties he may charge 6 salungs.

7. Both the superintendent of customs and the British consul shall be provided with sealed sets of balance yards, money weights, and measures, which may be referred to in the event of any difference arising with the merchants as to the weight or dimensions of money or goods.

PILOT REGULATIONS FOR THE PORT OF BANGKOK.

The pilots are licensed by the harbour-master, and their number limited to six; a pilot must show his license to those employing him under a penalty not exceeding \$30, and a copy of the pilot regulations under a penalty not exceeding \$25. The rates of pilotage in from the Bar to Bangkok, and out from Bangkok to a safe anchorage outside the Bar, inclusive, are \$50 for all ships under 150 tons; \$60 for all measuring from that up to 200 tons; \$70 from 200 up to 300 tons; \$75 over 300 tons and under 400 tons; \$80 up to 500 tons; and \$85 for all ships over 500 tons. Pilots are entitled to \$5 per day extra if detained on board a ship as long as three days by the want of seamen or other casualty; and to a part of the pilotage when he leads another vessel having no pilot, in bringing one into or out of port. If a pilot be unavoidably carried off the coast he shall receive \$5 per day additional to the pilotage till he return. Unlicensed pilots, or a person using another's license, shall be fined not exceeding \$200, and not exceeding \$50 for leaving a ship in the river before she is moored, or before she is at least 2 miles outside the Bar. The pilot court is to consist of the harbour-master, the consul of the nation to which a vessel on which a question has arisen belongs, and a competent shipmaster to be called by the pilot. Misdemeanors incur a penalty not exceeding \$100, and liability to suspension or dismission, besides damages at the suit of the aggrieved party. The distinguishing flag of pilot boats is a horizontal half-white half-red flag at the mast-head.

SIAMESE MONEYS AND WEIGHTS.

The coins formerly used in Siam were small pieces of gold and silver nearly globular in shape, of various sizes and denominations; the only small change was small cowries imported from China or the Archipelago. Lately the government has begun the coinage of flat silver ticals, instead of the old lump pieces, and of tin and lead pieces to supersede the shells. Accounts are kept in ticals, salungs, and fuangs in the following proportions:—

From 200 to 450 Bier or cowries . .	} make	1 Pai;	equal to $1\frac{1}{2}$ cents.
1 Pai		82 Saga or red beans;	
4 Pai or Sompai . .		1 Fuang;	7½ "
2 Fuang		1 Salung or main	15 "
4 Salung or miam, . .		1 Bat, or <i>tical</i> ;	60 "
4 Bat,		1 Tamlung,	\$2.40
20 Tamlung or 80 Bat		1 Chang,	\$48
50 Chang		1 Hap,	\$2400
100 Hap		1 Tara,	\$240,000

The fineness of the precious metals is expressed as in China by toques or touches, 100 denoting purity. They are weighed by the tical of 236 *grs.* troy. The new tical is to be of the standard purity; its device is a three-storied umbrella on one side, and an elephant on the other; the pewter coins are $\frac{1}{2}$ and $\frac{1}{4}$ *fuangs*, or half and quarter *pai*, with the same device, and the value expressed in the Siamese, Chinese and English languages. These will supersede the cowries, of which from 800 to 1,000 are given in exchange for a fuang. The tical is worth really about 57 cents or from 29*d.* to 30*d.*; its purity formerly was from 11 *oz.* 4 *dwt.* to 11 *oz.* 12 *dwt.* fine; 10 salungs are accounted equal to one Chinese tael, so that 5 Siamese equal 8 Chinese taels. Spanish or Mexican dollars are taken in exchange for cargo and ship's dues, and converted into the native currency, but are not commonly current in the markets.

The Siamese standard of *weight* is double that of the Chinese, and this being the coin of the country, weights are designated by the same terms, as given in the last table. Their equivalents are:—

4 Ticals	make 1 tael;
20 Tails	" 1 catty = 2 <i>lbs.</i> 9 <i>oz.</i> 4½ <i>dwt.</i> <i>av.</i>
50 Catties or 80 ticals	" 1 picul = 129 <i>lbs.</i> <i>av.</i>

The *coyan* is also known by merchants, and usually reckoned at 20 piculs; paddy is reckoned at 16 piculs of 133½ lbs. each, but the *coyan* ranges from 18 to 22 piculs, according to articles.

The *Measures of length* are :—

12 Niu	} make	1 Kup	=	9½ inches.
2 Kup		1 Sok	=	19½ Eng. inches.
2 Sok		1 Ken	=	39 Eng. inches.
2 Ken		1 Wa	=	78 Eng. inches.
20 Wa		1 Sen	=	180 Eng. feet.
100 Sen		1 Roeneng or league	=	2½ miles nearly.
400 Sen		1 Yote	=	9½ miles.

Timber is bought by the *yok* of 64 *sok* in length by 1 *sok* broad, equal to 36,864 *niu*, or Siamese inches of 1½ inches English each; that is, 169 feet long by 1 inch thick.

The *dry* and *liquid measures* are few; cocoanuts and buckets are much used to measure articles.

20 Tanans of 1½ pint each	make	1 Tang of 30 pints.
25 Tanans	"	1 Sat.
100 Tanga or 80 sata	"	1 Coyan.

SIAMESE DIVISIONS OF TIME.

The Siamese mode of dividing time contains a mixture of the Hindu and Chinese systems, and has many perplexing peculiarities. The cycle of sixty years is made by combining that of 12 called *pee*, with that of 10 called *sok*. The names of each term is as follows :—

<i>Cycle of Twelve.</i>			<i>Cycle of Ten.</i>		
1st term	Pee Chuat	is year of the Rat,	1st term	is called	Eka sok.
2	"	Pee Chalu " Cow.	2	"	To sok.
3	"	Pee Kan " Tiger.	3	"	Treeni sok.
4	"	Pee Taw " Rabbit.	4	"	Chattawa sok.
5	"	Pee Marong " Dragon.	5	"	Benya sok.
6	"	Pee Maseng " Snake.	6	"	Chaw sok.
7	"	Pee Mameea " Horse.	7	"	Sappa sok.
8	"	Pee Mamma " Goat.	8	"	Aatta sok.
9	"	Pee Wok " Monkey.	9	"	Nopa sok.
10	"	Pee Raka " Cock.	10	"	Samretti sok.
11	"	Pee Chaw " Dog.			
12	"	Pee Koon " Boar			

These two are combined when mentioning a year; thus 1862 is *Pee-raka treeni-sok*, or the year of the Cock. But the Siamese run through the larger cycle five times in completing a cycle of 60 years, and designate each lesser duodecenary cycle by adding the name of the year in the decenary cycle. Thus 1863 is *pee-chaw treeni-sok*, but 1865 is *pee-chuat chattawa-sok*, and 1866 is *pee-chalu chattawa-sok*, and so on. In this respect it is unlike the Chinese mode, from which the plan has been taken.

The day of 24 hours is divided into *wan* and *koon*, i.e. day and night. The first begins at 6 A.M., and the hours are reckoned 1, 2, 3, 4, 5, 6, up to noon, and are collectively called *péla chow*; the six hours of afternoon are also numbered 1 to 6, and collectively called *péla bai*. Hours of the day are called *mong*; those of the night *toom*. The hours of *koon* or night, run on from 1 to 12, beginning at 6 o'clock P.M.; divided into 4 *yam* or watches. 9 o'clock A.M. is *sam-mong-chow*; 3 P.M. is *sam-mong-bai*; 9 P.M., is *sam-toom*.

TABLE OF SIAMESE TIME.

60 Winatees	make 1 Natee or minute.
6 Natees	" 1 Bat.
10 Bats	" 1 Mong or toom, or hour.
12 Monga	" 1 Wan, or day-time.
12 Tooms	" 1 Koon, or night-time.
29 or 30 wana,	" 1 Duan or moon.
12 or 13 duana,	" 1 Pee or year.
10 Pees,	" 1 Sok or cycle.

Each day of a week has its own name, as follows :—

Sunday is Wan Atit,	or the day of the Sun.
Monday is Wan Chan,	" Moon.
Tuesday is Wan Angkan,	" Mars.
Wednesday is Wan Poot,	" Mercury.
Thursday is Wan Prahat,	" Jupiter.
Friday is Wan Sook,	" Venus.
Saturday is Wan Sow,	" Saturn.

The first half, or 15 days of each month is called *kang kun*, or waxing moon ; the second half is numbered from 1 to 14 or 15, and is called *kang raam*, or waning moon. The even months have 30 days, and the odd months 29 days—a rule which frequently alters the number of the day in a given month from that in the Chinese calendar. The intercalation of three days in 19 years, besides the seven months required by this computation to complete the 235 months of the Metonic cycle, is made by the astrologers, who occasionally add a day to the seventh moon. The twelve months are numbered, except the 1st month called *duan Ai*, or month *Ai* ; and the 2d called *duan Yee*, or month *Yee* ; the others are *duan sam*, *duan see*, *duan ha*, *duan hook*, *duan ket*, *duan peet*, *duan kau*, *duan sib*, *duan sib-it*, and *duan sib-song*, i.e. 3d month, 4th month, to 12th month, as in China. The 1st and 2d months are called winter, the 3d, 4th and 5th are called little summer, and the remaining seven, great summer.

The Siamese year is luni-solar, and intercalary months are added in the same manner as in China ; but the civil newyear comes about two months later in the latter part of March, in the fifth or sixth moon of the sacred year, which begins in the new moon of our November or December.

The Siamese sacred era is reckoned from the reported death of Budha, B. C. 545 ; it is called *Putā sakkarat*, or Budha's era, and is used only in religious matters. The year 1863 is the 2406th year of this era ; the 2407th begins in May 1863. The civil era, called *Chula sakkarat*, is reckoned from the time when Phra Ruang, a celebrated Siamese king, established it in A.D. 638, shortly after the Hejira ; 1863 corresponds to the 1225th year of this era. In writing a date, the Siamese express the year of the era, the day of the week, the day of the waxing or waning moon, the month, and the cyclic name of the year ; this is done by uniting the words from the two cycles as has been explained. In writing dates, it is usual to place the day of the week, day of the waxing or waning moon, and the number of the month, at the four points of a cross ; thus 2-4 is Monday, the 5th day of waning moon of the 4th month.

Astrology has great influence among the Siamese, and every person is taught to remember the exact date of his birth, and the list of years in the two cycles, but especially in the larger of 12 years. If a man is asked his age, he begins by reciting over the names of the cyclic years from his birth, until he has run through the twelve, keeping tally with his fingers; then he repeats the cycle again and again, till he reaches the existing year, and then reckons up the total. The Siamese do not usually reckon consecutively by the year of either the sacred or civil era, nor by the year of the reigning monarch, as the Chinese do; this explains, somewhat, their greater usage of the duodecenary cycle.

Section 4.

NETHERLANDS INDIA.

THE monetary system of Netherlands India has latterly been assimilated to that of Holland. The silver standard coin is the Netherlands *guilder*, which is divided into 100 *centen*; and there are also half and quarter *guilder*, and dimes of 10 *centen*. The only copper money is the *centen*, the old *duiten* having been all called in. Every other kind of copper coin is prohibited. Gold and silver coins of all descriptions are admitted into Java, but are articles of trade and not parts of the currency. Ten *guilder* pieces, Dutch gold ducats, both new and old, English sovereigns, and doubloons, are all more or less common.

A paper currency is also issued under governmental control by the Java Bank, at Batavia; with branch offices at Soerabaya and Samarang. The notes are for *f*.1000, *f*.500, *f*.300, *f*.200, *f*.100, *f*.50, and *f*.25, for silver only.

The weight for gold and silver is the Dutch mark troy, divided into 9 reals, each weighing 422 *grs*. English. The commercial weights in common use are based on the Chinese weights, thus:—

16 Taels	} make	{ 1 Catty;	= 1½ lbs. Dutch troy.
100 Catties		{ 1 Picul;	= 125 lbs. ditto, or 136 lbs. avoiz.
3 Piculs		{ 1 small Bahar;	= 408 "
4½ Piculs		{ 1 large Bahar;	= 612 "

In foreign trade, however, the Dutch troy pound of 2 marks is generally used. The proportions of Dutch and English weights are,

1 Dutch troy pound	=	7576 <i>grs</i> . troy Eng.
1 Dutch commercial pound	=	7625 " "

The measures for rice and grain are the *picul* and *coyan*, and for smaller quantities, the *timbang* and *gantang*. The *coyan* weighs at

Batavia,	27 piculs,	or 3375 lbs. troy Dutch.
Samarang,	28 "	or 3500 lbs. " "
Soerabaya,	30 "	or 3750 lbs. " "

The *timbang* contains 5 piculs or 10 sacks; 5 *gantangs* make 1 *measure*, and 46 measures are equal to a *last*. These measures are principally in use among the natives. The most general liquid measure, in all the Dutch settlements, is the *kan*, 33 of which are equal to a little more than 13 English gallons. A leager of arrack is 388 Batavia kans, equal to 133 imperial gallons, or 550 litres. Of long measure, the *el* is 27½

English inches; and the foot of 12 *duimen*, or Dutch inches, is equivalent to 12 $\frac{2}{3}$ English inches.

Goods imported directly from Holland under the Dutch or assimilated flags, with certificate of Netherlands origin, usually pay only half the tariff rates; the exceptions are cigars, wheat, saltpeter, gunny bags or twine, and a few other commodities. Exports sent to Netherlands in Dutch ships or under assimilated flags, are favored with a reduction of one-half, or are altogether free; rice pays 10 centes per coyan. The assimilated flags are England, United States, Sardinia, Sweden, Prussia, Denmark, Austria, Greece, Hamburg, Lubeck, and Bremen.

Section 5.

PHILIPPINE ISLANDS.

THE ports of Manila and Sual in the island of Luzon, Iloilo in the island of Panay, and Zamboanga in Mindanao, are now opened to the ships of all nations at peace with Spain.

PORT CHARGES AT MANILA.

IN THE BAY.	ON SPANISH VESSELS.				ON FOREIGN VESSELS.			
	Ton- nage Dues.	Bar Fee.	Light Dues.	Total.	Ton- nage Dues.	Bar Fee.	Light Dues.	Total.
	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.	Cents.
If a vessel loads and discharges cargo,.....	12 $\frac{1}{2}$	3 $\frac{1}{2}$	3 $\frac{1}{2}$	18 $\frac{1}{2}$	25	6 $\frac{1}{2}$	6 $\frac{1}{2}$	37 $\frac{1}{2}$
If vessel loads or discharges cargo,.....	12 $\frac{1}{2}$	1 $\frac{3}{4}$	3 $\frac{1}{2}$	17 $\frac{3}{4}$	25	3 $\frac{1}{2}$	6 $\frac{1}{2}$	34 $\frac{1}{2}$
If vessel enters and leaves with the same cargo,.....	6 $\frac{1}{2}$	1 $\frac{3}{4}$	3 $\frac{1}{2}$	10 $\frac{1}{2}$	12 $\frac{1}{2}$	3 $\frac{1}{2}$	6 $\frac{1}{2}$	21 $\frac{1}{2}$
If vessel enters and leaves in ballast,.....	6 $\frac{1}{2}$	0	3 $\frac{1}{2}$	9 $\frac{1}{2}$	12 $\frac{1}{2}$	0	6 $\frac{1}{2}$	18 $\frac{1}{2}$
IN THE RIVER.								
	Cents.				Cents.			
If vessel loads and discharges cargo,.....	9 $\frac{1}{2}$				18 $\frac{1}{2}$			
If vessel enters and leaves with the same cargo,.....	3 $\frac{1}{2}$				6 $\frac{1}{2}$			
If vessel enters in ballast and leaves with cargo,.....	4 $\frac{1}{2}$				9 $\frac{1}{2}$			
If vessel enters and leaves in ballast,.....	3 $\frac{1}{2}$				6 $\frac{1}{2}$			
If vessel enters with cargo and goes coasting,.....	6 $\frac{1}{2}$				...
If vessel enters in ballast and goes coasting,.....	3 $\frac{1}{2}$				...

These rates are estimated by the Spanish ton, 123 of which are equal to 100 English tons. Coin is not considered to be cargo. If the vessel has a single package as cargo, or takes any parcels of musters, &c., they are regarded as cargo, and subjects her to dues accordingly.

EXPORT DUTIES.

Goods are stored for 1 per cent. on entry, and the same when re-shipped; and an additional 1 per cent. is charged if they remain more than a year. A ship, on her arrival, must not communicate with the shore until the harbor-master has boarded her; and thirty hours after this the manifest must be presented at the custom-house, detailing the marks, numbers, and bales, of the cargo; a vessel may retain her cargo on board 40 days after the manifest is presented.

GOODS OR CARGO.	SPANISH VESSELS.		FOREIGN VESSELS.	
	To Spanish Port.	To Foreign Port.	To Spanish Port.	To Foreign Port.
The products and manufactures of the Philippine Is., or any imported goods which have paid duties, per quintal,.....	1 per cent	1½ per cent	2 per cent	3 per cent
Hemp, per quintal,.....	1 "	1½ "	2 "	2 "
Rice, per quintal,.....	free	free	3½ "	4½ "
Silver, coined, per lb.....	free	2 per cent	free	4 "
Gold coin, per lb.....	free	1 "	free	1 "

Tobacco in leaf or manufactured, cordage, silver uncoined, and gold in bars or dust, are all free. The above rates are levied on a custom-house valuation, which varies with market quotations of produce.

IMPORT DUTIES.

These are levied on a fixed custom-house valuation, according to the following scale and distinctions;—

DESCRIPTION OF GOODS.	SPANISH VESSELS.	FOREIGN VESSELS.
Spanish goods imported in.....	8 per cent.	8 per cent.
Foreign goods imported in.....	7 "	14 "
Spirituous liquors from Spain in.....	10 "	25 "
Do. do. from foreign ports in.....	30 "	60 "
Beer and cider from Spain,.....	8 "	10 "
Do. do. from foreign ports,.....	20 "	25 "
Spanish wines of all sorts,.....	3 "	8 "
Wines from foreign countries,.....	40 "	50 "
Except champagne and constantia,.....	7 "	14 "
Foreign fabrics of cotton and silk in imitation of native cloths, especially stripes or checks of black, blue, or purple colors, gray, white or stamped cottons from Madras or Bengal, towels, napkins, and table-cloths,.....	7 "	14 "
Bicho-de-mar, rattans, diamonds, tortoise-shell, birds-nests and mother-o'-pearl,....	1 "	2 "
Cotton twist, red, yellow and green; gold and silver coin and bullion; plants and seeds,.....		free
Tropical productions like those of the Philippines, gunpowder and arrack,.....		prohibited

Opium is received in deposit, and sold by permission of government to the Chinese settlers alone. Swords, fire-arms, muskets, pistols, and all kinds of weapons (except cannon and side-arms), cannot be imported for consumption without special permission, but may be stored.

Articles not mentioned in the tariff pay about 7 per cent. duty in Spanish vessels, and 14 per cent. in foreign vessels, upon the valuation fixed by the custom-house. If an article has no fixed market value, duties are levied on its invoice cost, with 25 per cent. added, except machinery, which is taxed 10 per cent. on invoice cost. Manufactures of countries west of the Cape of Good Hope, reshipped to these Islands from any port in Asia or Oceania in Spanish vessels, will be charged 2 per cent. extra duty, except from Singapore, when one per cent. additional will be imposed. All manifests of vessels to ports in the Philippines must be certified by the Spanish consul or vice-consul in the port whence they sailed. Vessels without such certificate will be fined \$200.

The chief articles of trade in the Philippines are hemp, rice, tobacco, coffee, sugar, and sapan-wood; besides these, indigo, tortoise and mother-of-pearlshells, hides, horns, hide-cuttings, and mastich, are important items. The export of sugar in 1862 was 1,292,191 piculs, mostly to the United States, England and Australia, value about \$4,000,000; of hemp, 471,899 piculs at \$2,125,000; of coffee, 27,222 piculs at \$500,000; and of rice 64,883 piculs at \$100,000.

Coins.—Accounts are kept in dollars, rials, and granos, in the following proportions:—

34 Maravedia, or 12 granos	} make	{	1 rial;
8 Rials, or quintos			1 silver dollar or peso;
16 Dollars			1 gold doubloon.

The currency consists of Spanish gold and silver coins, and Mexican and South American silver dollars. The colonial mint recoins Mexican and South American doubloons into coins of one, two and four dollars. It buys gold 1000 fine at 4.22 cents per troy grain, provided the bullion is not under 880 fine, for which payment is made in small gold at par.

The weights commonly in use are the picul and its parts. There are also the following Spanish weights:—

8 drams	} make	{	1 ounce	
16 ounces or 2 marks			1 pound	
25 pounds			1 arroba	= 25½ lbs. av.
4 arrobas or 100 lbs.			1 quintal	= 102 "
5½ arrobas, or 137½ lbs.			1 picul	= 146 "

Measures.—The Spanish foot is about 11½ English inches. It is divided into 12 *pulgadas*, each containing 12 lines. The *vara*, or measure for cloth, is two feet, or 4 *palmas*, or 36 *pulgadas*, equal to 33½ English inches; 100 *varas* are equal to 32½ English yards. Cotton goods and some other fabrics are however sold by the English yard. The *corge* is 20 pieces. The *caban*, a measure for grain, contains 3½ cubic feet; a *caban* of rice weighs 123 lbs., and of paddy about 85 lbs.; 16 Manila piculs equal 1 ton English weight. One ton weight of hemp measures just 2 tons of 40 cubic feet.

PORT ILOILO IN PANAY ISLAND.

The following observations relative to the passage from Manila to Iloilo, with a description of that port and the coast of Panay, are inserted as a supplement to the preceding general observations, as the trade with it is increasing. They are from Nicholas Loney, Esq. :—

Vessels bound from Manila, or from ports to the northward, may, during the N.E. monsoon, safely proceed towards Iloilo through the Mindoro Passage, and onward through the chain of islands off the northeast coast of Panay, for which charts of the Spanish "Comision Hidrografica" compiled by Don Claudio Montere, in 1857, would be useful. After passing Tablas and Romblon (which latter island possesses an excellent harbor, used by coasting vessels for completing wood and water, and much frequented by them as a port of refuge,) steer for the group of small islands, called collectively the Silangan, lying off the northeastern coast of Panay, a good mark for which is the high conical island named Pan de Azucar, or Sugar-loaf, which is visible from a great distance. In approaching these islands during the N.E. monsoon, vessels should pass between the islets of Jintotile and the Zapata-mayer; and during the S.W. monsoon, more in towards the Panay shore, between Olutaya and Zapato-menor. After leaving the Zapatos, the course is to the south or northward of the Gigantes, as preferred, and the channel through the group of islands is generally entered between Sicogon and Calaganan; from whence the route is continued between Culebra and the main, Pan de Azucar and Malanganan, inside Belubediangan and Tagubanan islands; though for vessels of heavy draught of water, and for strangers, it may be found preferable to adopt the outside and broader passage between the group of islands and the island of Negros, keeping a lookout for the easily avoidable shoal water marked on the chart above referred to. If the inner route among the islands (which is always adopted by coasting vessels of all sizes) be taken, ships will find safe anchorage throughout the whole passage, more particularly at Pan de Azucar, and at Bacanan or La Concepcion, where assistance and supplies may be had if needed, through the Commandant of the district; and at Apiton, good water and live stock may also be obtained. After passing Tagabanan, and emerging into the broad channel between the coast of Panay and the island of Negros, the best course is to steer direct for the highest land visible on the island of Guimaras, care being taken to clear the Pepitas rock. In case the outside and broader passage should be taken, the North Gigante should be passed at a distance of at least 2 miles, as discolored water has been reported at from 1 to $1\frac{1}{2}$ mile. After passing the Gigantes, steer in for the island of Pan de Azucar, passing to the eastward of the islands of Malanganan, Belubediangan, and Tagubanan, and between the latter and the small island of Anasayan, which has a clear channel of $1\frac{1}{2}$ mile wide; entering the straits between Negros and Panay, steer on by the land, avoiding the Pepitas rocks, which lie some distance from the shore and are a wash, and giving Point Tomouton on the island of Negros, a berth of at least three miles.

After passing the Calabanas islets and Pepitas rock, and sighting the blockhouse of Benate (erected, like many others, along the Philippine coasts, for defence against the pirates of the Sulu Sea,) the course is due south until sighting a group of seven remarkable rocks, called the Siete Pecados (Seven Sins,) which lie between the north end of Guimaras and the Panay shore; a direct course for these should then be made, taking care to keep the lead going, to avoid the Iguana bank.

On approaching Point Dumagas, attention is requisite to avoid the shoal water, which extends to some distance, and is steep to. On opening the channel between Guimaras and Heile, and on getting the Siete Pecados rocks to bear W. $\frac{1}{2}$ S., steer direct for them, passing between these and the Panay shore. There is no passage, except for small vessels, between the Siete Pecados Rocks and Guimaras Island. This course will clear the Iguana bank, lying to the S.E. of the Pecados, which has 1 to 2 fathoms water on it. The lead is a good guide in entering this channel, the depths of water being 6, 7, 8, 11, and 15 fathoms, until the Pecados Rocks are passed to the southward, when the water deepens to 18 and 19 fathoms. Having passed the rocks, the south shore should be kept on board, to avoid the shoal water on the Panay side. When the fert, which is 1 mile to the west of the entrance of the river Iloilo, bears W. S.W., steer for it, anchoring as convenient in 10 or 12 fathoms, $\frac{1}{2}$ of a mile off shore to the eastward of the river.

Anchorage.—The best anchorage, and the one least exposed to the sweep of the tides, is to bring the guard-house on the south point of the river to bear W. $\frac{1}{2}$ S., a short half mile from it, avoiding the extensive mud flat to the northward. The Dutch barque *Billion*

completed her loading with the fort bearing S. W. $\frac{1}{4}$ W., and the Bantay (a small bamboo watch-box) near the port entrance of the river, bearing N. W. $\frac{1}{4}$ N. The ship was out of the strongest currents, with this advantage that the cargo-boats could always easily reach her and return. During the S.W. monsoon, when the surf is sometimes heavy, it is desirable for boats not to keep too near the starboard entrance of the river.

Strangers, during the S.W. monsoon, generally proceed through the Mindoro Straits, and along the west coast of Panay (coasting vessels, however, always use the passage to the east of that island), close along the coast of Antique, because the west monsoon is not very regular, and does not often blow strongly between Guigos Archipelago and Panay, or to the north of Basilan. To the north, and along the east coast of Mindoro, the passage is safe and easy; and if vessels meet with strong S. W. winds near Tablas, there is time then to keep off, and proceed along the east coast of Panay. The west coast of Panay may be approached with safety anywhere to the southward of the isle of Batbatan (which is very steep, and where under point Lipata, is the only safe anchorage for large vessels during the S.W. monsoon,) and the isle of Maralison, which has a reef to the east and west.

The south coast of Panay is free from dangers till near the village of Otong, and the wind scarcely ever blows on the land. The coast of Guimaras, to the north of Point Balingasag, or to the north of Port St. Ana, is likewise safe. The bights along the coast have deep water, and vessels can work close in shore, or from point to point, with perfect safety, but generally there is no good anchorage, as the coast is steep, and the holding-ground is not good. In passing the S. W. point of Panay during the night, do not close the islands of Nogas and Jurao Jurao, as both these islands have reefs round them to the southward. When clear of these islands round the S. W. point of Panay, and not too much to the south, vessels may then safely steer N. E. by E. 32 miles without any danger, but after running that distance they should heave-to during the night; or if the night is very clear, run towards the coast of Panay, keeping the lead going, and as soon as the water shoals, anchor till daylight, because, by keeping over to the Guimaras shore (particularly during the N. E. monsoon) they will find no anchorage, and will lose ground.

It is necessary to follow the above instructions very carefully, because the Otong bank stretches out more to the west and south-west than is shown on the chart, and is yearly increasing; and also because the tide runs very strongly on both sides of it. With the flood-tide against a N. E. monsoon vessels can easily work up in short tacks under Guimaras shore. The best mark at present (1863) to clear the west edge of the Otong Bank, is the village of Otong on the Panay coast, not brought to the west of north, until the fort of Iloilo bears N. E. $\frac{1}{4}$ E., from which bearing steer straight for the fort, or a little to the south of it, but be careful in working up never to bring the fort east of N. E. $\frac{1}{4}$ E.

In thick or hazy weather, when you cannot see the fort, which is very seldom the case, do not bring the point of Bondulan on the coast of Guimaras to the east of N. E. $\frac{1}{4}$ E. Keeping the fort a little open from this point is the best leading mark with a fair wind. When past Point Bondulan, with a fair wind, keep the fort a little on the port bow, but in working up, never bring the fort to the east of N. E. $\frac{1}{4}$ E., because the bank is steep, and shoals suddenly from 9 to 2 $\frac{1}{2}$ fathoms.

The island of Guimaras forms, in front of Iloilo, a sheltered passage, running nearly north and south, of a breadth varying from 2 $\frac{1}{2}$ to 6 miles, with deep water and good anchorage. The southern entrance to this passage is much narrowed by the Otong bank; which extends a considerable distance from the Panay shore, and contracts, for about a mile, the available channel at this part to the breadth of about 2 $\frac{1}{2}$ miles. This shoal is fast becoming an island. There is, however, no obstacle to large vessels during the S. W. monsoon (especially as the channel is to be buoyed,) the passage being quite clear; and in the N. E. monsoon they can work or drop through with the tide, keeping well over towards Guimaras, the coast of which is clear, with deep water quite close in, and anchoring, if necessary, on the edge of the shoal, which affords good holding ground, and may be safely approached. The whole of this part of the coast is, in fact, safe anchorage during the N. E. monsoon when bound to the port of Iloilo, and if it should blow hard in the southern channel, a vessel may proceed to the port of Buluanga, or Santa Ana, on the S. W. side of Guimaras, which is easy of access, capable of admitting vessels of the largest tonnage, and affords good shelter under almost any circumstances.

Tides.—It is high water at Iloilo, full and change, at 12h. Springs rise nearly 6 feet. The stream runs at about 2 knots through Iloilo channel. The flood sets to the northward.—Variation of the compass scarcely perceptible.

Depth of Water.—Port Iloilo, situated on the southern shore of Panay Island, is well protected, and naturally good. Large vessels may enter with safety. The depth of water on the bar, at the entrance to the river Iloilo, is about 5 fathoms at low water; but at a

short distance within, it decreases to 15 feet, and then deepens again. The rise of the tide being 5 feet, a vessel drawing 16 to 18 feet can easily enter or leave, and when, as is proposed, a dredging machine is employed to clear away the mud, which has been allowed to accumulate at the shallow parts near the entrance, vessels of almost any draught will be able to complete their cargoes inside. Vessels of 700 tons register have loaded part cargoes alongside the jetties. The custom is for vessels to load to 14½ or 15 feet in the river, and complete their cargoes outside.

To enter the River and inner port of Iloilo.—Although the land is low at the entrance, the mouth of the river is distinctly seen, being marked by four large beacons, one on the port, and the others on the starboard side. On entering, keep the port beacon close on board, after passing which, steer for the point on the starboard hand, giving it a berth of 40 feet; keep the east bank close on board until after the second point is passed, then close the port side to the wharf or anchorage. The banks of the creek being soft mud, there is little or no risk to be apprehended from grounding. Proceeding about 1¼ mile up the creek, which varies in breadth from a half to three quarters of a mile, vessels bring up at the jetties, and have the great advantage of discharging and loading at the stores without employing boats. Beyond this point the creek reaches as far as Molo, to which place coasting vessels formerly could proceed by passing through a drawbridge. A new bridge has lately been constructed, but the movable drawbridge designed to allow vessels to proceed to Molo is not yet completed.

Beef and Water.—French beef is cheap and very good, and by giving a few days' notice 200 or 300 bullocks could be procured, each weighing about 200 lbs., at the rate of about \$7 a bullock. Good water can always be got to the north and south of the village called Tilat, on the opposite shore of Guimarae, or N. E. by E. of the anchorage, where there are both streams and springs. The best plan is to take up the caeks at high water on the beach, and, with the help of the natives, fill them ready to go off with next tide, taking care to leave a little before high water, so as to be sure of reaching the ship near the fort, for the tide changes very suddenly, and runs down very strong.

Repairs.—The American ship *Mountain Wave*, of 693 tons, was hove down, coppered, caulked, and supplied with a new bowprit in 1861. A vessel of 1,000 tons has lately been launched from Iloilo.

Port Dues.—On foreign vessels arriving and leaving in ballast, 12½ cents per ton; with cargo inwards or outwards, 25 cents per ton.

Manifest.—A fine of \$200 is exacted in all cases on ships arriving without this document properly certified by the Spanish authorities.

Wages.—The wages of laborers average from 12½ cents to 18½ cents a day; carpenters, 18½ to 25 cents a day; caulkers, 25 to 37½ cents.

Produce.—The country round Iloilo is well cultivated; the inhabitants are quiet and industrious. The chief exports are sugar (principally to Australia in 1862) sapan-wood, tobacco, hides, hemp, rice, and native-made piece-goods. Total export of sugar from Manila to Australia in 1862, was 12,125 tons. The women weave large quantities of goods from the fibres of the pine-apple leaf, and from cotton, silk and hemp. The country in the neighbourhood, and on the opposite coast of Negros, is very fertile and well adapted for sugar plantations, the number of which has much increased of late years, since the opening of the port to foreign trade.

Section 6.

MALAYAN STATES, SINGAPORE, &c.

THE chief *silver coins* throughout Ultra-gangetic India are the rupee and dollar. The natives of the Archipelago formerly exchanged articles for gold or silver by weight; and the Achinese once coined a gold piece, worth about 27 cents. The only native coin among the Malays is one called *piti*, made of tin, somewhat larger than the Chinese cash, and cast in the same way with a hole; about 1280 of them are exchanged for a dollar. Foreign moneys have free access into these states, especially Spanish or Mexican dollars, and the copper duiten, once in use at Batavia. In places under the British government, the rupee, with its

subdivisional annas and pice, have been introduced; but they have not become the commercial currency, except at Penang.

At SINGAPORE, the government accounts are kept in rupees of 16 annas and 192 pice. Commercial accounts are kept in dollars and cents. The current copper money is a mixture of Dutch doits, pice of East Indian coinage, and coin of private manufacture of equal value with the doit; all which pass under the name of *pice*, a term derived from the Javanese word *pichis*. Ten pice make 1 *fanam*; and from 31 to 32 *fanams* make 1 *ringit* or dollar; a Spanish dollar is reckoned at 2 rupees 3 annas.

MALACCA has the same currency as Singapore, with the addition of a few old Dutch moneys, *viz.*, the rix dollar and guilder, and their subdivisional parts. The rix dollar is a nominal coin, in which accounts used to be kept, of from 19 to 20 *fanams*, or about 192 doits. The guilder or rupee has the value of 12 *fanams*; half rupees and schillings are also met with. The copper coins are the cent, half cent, and quarter cent.

At PENANG, the currency is less mixed than at Singapore and Malacca. Accounts are kept for the most part in rupees, annas, and pice, and *copangs*, which is a nominal money of the value of ten pice; 10 *copangs* equal a dollar. Dollars always pass current. Gold coins, other than English sovereigns, are rarely met with in the Straits.

The same denominations for moneys, weights and measures prevail, with various degrees of relative distinction, throughout most of the native Malay states.

Weights.—The commercial weights in use between Europeans and natives, are the Chinese picul, catty, and tael.* A little discrepancy exists in the weight of the picul and catty in some places; and there is a distinction between the Chinese and Malay picul; the latter is equal, at Penang, to 142½ *lbs. av.*, and is used only to weigh tin and pepper. This discrepancy arises from the use of the *bahr*, which varies considerably in weight, and is divided into 3 Malay piculs; the *bahr* is equal at Penang to 421 catties. By the Malay picul, goods are purchased from native vessels; but they are re-sold by the Chinese picul. By the *coyan* of 40 Chinese piculs, grain and salt are sold; a bag of salt weighs 100 *lbs. av.*, but one of rice or gram weighs 164 *lbs.* The *coyan* at Penang is a measure; 45 piculs of rice, or 43 of salt, make a measurement *coyan*. Gold thread at Penang is sold by the catty of \$36 weight, or 31 *oz.* 4 *drams*.

The Chinese *dotchin* (*sz'ma*) is commonly met with; but among merchants, English weights and scales are generally used; and in fact, wherever Europeans have colonized or settled in Malaysia, they have fixed the imperfect native measures and weights, either by making them the standard, or by supplanting them with their own. Gold dust is weighed by the *bunkal*, equal to \$2, or 832 grs. troy, which is divided into 16 *miams*, each *miam* containing 12 *sagas*; a catty of gold is 1½ of the

* The word *picul* is derived from the Malay word *piknu*, which, like its equivalent *tan* in Chinese, means a load or burden; *mace* and *tael* are derived, through the Malayan *mas* and *tail*, from the Hindu *masha* and *tola*; *cash* comes from *caixa*, the Moorish name of the tin coin found at Malacca by the Portuguese in 1511, and brought there from the Malabar coast; *catty* or *kati* is the Malayan pound, and *candareen* or *kondria* is likewise Malay.

common catty. In the towns on the eastern side of the Peninsula, the *bunkal* and *catty* are found to be about ten per cent. less than these. Pulse, dholl, and rice from Bengal are sold by the bag of 3 bazar maunds, or 164½ lbs. Piece-goods are sold by the corg of 20 pieces, and Java tobacco by the corg of 40 baskets. At Malacca, the picul weighs 135 lbs. av.; and 3 piculs, or a *bahr*, is 428 lbs. av.

Measures.—The measure of length frequently used by the Malays and other natives is the *hasta* or cubit, equal to 18 English inches; but among Chinese, as well as Europeans, the English yard is always used. The following are the terms employed in land measures:—

4 hastas	}	make	{	1 depa; =	2 yards English.
2 depas				1 jumba; =	4 " " or 1 ½ acre.
20 jumbas				1 orlong; =	80 " " or 1 ½ acre.

The chief measure of capacity for grain and oil is the *gantang*, divided into 4 *chupaks*, each about 2½ lbs. av.; the *gantang* is equal to 271.65 cubic inches, or 1½ gallon; 10 *gantangs* make 1 *parak*, which is merely a nominal measure; and 80 *paraks* of rice make a picul; 800 *gantangs* are counted to a *coyan*, about 2 tons 7 cwt.

Section 7.

BURMAH.

THERE is no coinage in this country; silver and lead pass current in fragments, and are cut up and weighed, the former of various degrees of purity and of every size, from a round cake weighing 2 or 3 ticals, to small bits. Lead is usually reckoned at 500 to 1 of pure silver; but sometimes 15 viss of lead are given for a tical, and in cities only 7 or 8 viss. The rupee generally circulates as a tical, and the Indian currency is more and more extending throughout Burmah. The whole series of Burmese moneys, weights, and measures, is extremely rude and uncertain, more so than in most other Asiatic nations.

Burman weights are exhibited in the following table, and are used both for goods and money:—

2 small ruays.....	equal	1 large ruay, or 1 pice.
4 large ruays.....	"	1 bai or ruay,.... 1 anna.
2 bais.....	"	1 moo,..... 2 annas.
2 moos.....	"	1 mat,..... 4 annas, (62½ grains troy.)
4 mats.....	"	1 kyat,..... 1 tical, (262 grains troy.)
100 kyats.....	"	1 piakthah or viss..... (3½ lbs. or 140 tolas.)

The small ruay is the little scarlet bean (*Abrus precatorius*) with a black spot upon it, called in America, *crab's eye*. The large ruay is the black oblong bean of the *Adenanthera pavonina*. The other weights are made of brass, handsomely cast and polished.

The Burmese have a "poor man's measure," one in common use; and a "chief's," or "great man's measure," employed in government measurements. The royal cubit is 19½ inches. All these terms are gradually giving place to the English foot and yard measure.

MEASURES OF LENGTH.

8	thits (fingers' breadth) equal	1 maik, (breadth of the hand with thumb extended.)
1½	maiks	1 twah (span.)
2	twahs	1 toung (cubit.)
4	toungs	1 lan (fathom.)
7	do.	1 tah (bamboo or rod.)
140	do. or 20 tahs	1 oke-tha-pah.
7000	do. or 1000 tahs	1 daing, equal to 2 miles, 581 ft. 8 in.
6½	daings, or 6400 tahs, or } 320 okethapas,	1 uzena, or about 12.72 miles (in little use, except in the sacred books.)

MEASURES OF CAPACITY.

2	Lamyets are equal to.....	1 lamay.
2	Lamays	1 salay or about 1 pint.
4	Salays	1 pyee, nearly ¼ gallon.
2	Pyees	1 sah or gallon.
2	Sahs	1 maik, nearly a peck.
2	Saiks	1 kwai.
2	Kwais	1 ten or teng.
100	Tens	1 coyan, about 2 bushels.

The *teng* is what Europeans call a *basket*, from the basket measure of that capacity. This full of clean rice is a common allowance to a laborer for one month. It is deemed to weigh 58½ *lbs. av.*, or sixteen *viss*, or forty Penang catties. It can be inferred from the terms used in both these table how imperfect and uncertain are the measures used in Burmah. They are gradually giving place to the British-Indian terms, as intercourse extends between Burmah and India.

Section 8.

INDIAN PRESIDENCIES.

BENGAL.

THE old moneys of India, though consisting of but a few *denominations*, were extremely various in their intrinsic *value*. While the Mogul emperors were sole sovereigns of Hindostan, there was throughout their dominions but one kind of silver coin, denominated the *Sicca Rupee*, as being of the weight called *sicca*, which was the unit of size for all other weights. The *sicca* weight answered to 179½ grains English, and was also divided into 16 *annas*, each *anna* subdivided into 12 *pie*; it was also divided into *mashas*, but the relative value of the rupee and *masha* appears to have varied. The gold *mohur* was of the same weight as the *sicca* rupee, and both were of extreme fineness. When the native princes established mints in their several states, they in course of time varied from the original standard, particularly in the purity of their coins. Hence the multiplied variety of rupees throughout India.

Since 1835, a more uniform currency has been established. Silver is the legal medium of exchange, the gold coins not being demandable for payments, and not received into the public treasuries — a strange anomaly, that a government coinage is refused to be taken back by its makers. The following table exhibits the scheme of the British-Indian monetary system, as at present established :—

Table of British-Indian Monetary System.

Gold Mohur.	Co. Rupee.	Anna.	Pyca.	Pie.	Weight in Grains.	Value.
Calcutta 1	16	256	1024	3072	204.710	£1 13s. 8d.
Madras & Bombay 1	15	240	960	2880	180	£1 9s. 3d.
	1	16	64	192	180	1s. 11½d.
		1	4	12		¼d.
			1	3		⅓d.

The gold coins current are the mohur of 16 rupees, and the gold rupee of 15 rupees, with halves and quarters of proportionate weight. The silver coins are the double and single rupee, halves, quarters, and two annas. The copper pieces are half annas, weighing 200 *grs.*, pyca of 100 *grs.*, half pyca, and a pie of 33½ *grs.*

The standard of Bengal money is the rupee; it weighs 180 grains troy or one tola, and contains ½th, or 176 *grs.* of pure metal, and ¼th, or 16 *grs.* of alloy. The London mint price of the rupee is 1s. 11.04d., the Calcutta mint price is 2s. 0.035d., and the par exchange price is 1s. 11.51d.

The Company's rupee is the only silver rupee in use, but accounts are still kept in sicca rupees, and some goods are sold by them, reckoning 100 sicca rupees equal to 106 Rs. 10 an. 8 pi., or 116 current rupees. There was formerly the Arcot rupee, 100 of which were equal to sicca Rs. 93 11 an. 7¾ pi.; and the Sonant rupee, 100 of which equaled sicca Rs. 95 11 an. 0¾ pi.; these, as well as some others, are all gradually giving place to the standard rupee.

A lakh is 100,000 rupees, and a crore is 100 lakhs or a million sterling; in accounts, sums are distinguished into crores and lakhs by being thus divided:—1,00,000, for one lakh, and 1,00,00,000 for one crore.

Small white glossy cowry shells are sometimes used for small payments in the bazar, and are generally thus reckoned:—

4 cowries	} make	1 gunda;
20 gundas		1 pun;
8 puns		1 anna;
4 annas		1 cahun. The cahun is about ½ rupee.

Weights.—The unit of weights is the *tola* of 180 *grs.* troy, which is the weight of a rupee, and has been taken by the government as the foundation of the larger weights — seer and maund. This weight is very convenient, from the circumstance that fractions are rendered unnecessary in converting Indian into English weights, 35 seers being exactly equal to 72 *lbs. av.*; 49 maunds equal 4032 *lbs. av.* or 36 *cwt.* From the *tola* upwards are derived the heavy weights, *viz.*, *chitak*, *seer*, and *maund*; and by its subdivisions are obtained the small or jeweler's weights, called *masa*, *ruttee*, and *dhan*. The mun or maund varies exceedingly in its weight; at Tabriz in Persia it is only 6½ *lbs. av.*, while at Palloda in Ahmednugger it is 163½ *lbs.*

Proportion of Indian large and small Weights.

<i>Maund.</i>	<i>Pus- sere</i>	<i>Seer.</i>	<i>Chitak.</i>	<i>Tola.</i>	<i>Masha.</i>	<i>Ruttee.</i>	<i>Dhan.</i>	<i>Troy.</i>	<i>Avoirdupois.</i>
1	8	40	640	3200	38,400	307,200	1,228,800	100 lbs.	82½ lbs.
	1	5	80	400	4,800	38,400	153,600	12½ lbs.	10½ lbs.
		1	16	80	960	7,680	30,720	2 lbs. 6oz.	2½ lbs.
			1	1	60	480	1,920	1oz. 17d 12gr	2½ oz.
				1	12	96	384	180 gra.	6.58 dra.
					1	8	32	15 gra.	
						1	4	1.875 gra.	

This effort to equalize the weights has not by any means yet done away with those which have been in use among the Hindoos for ages, but uniformity is gradually working its way among the people. By the legal maund of 82½ lbs. av. or 100 lbs. troy, a picul is 1.62 maunds; an English cwt. is 54½ seers or 1.36 maunds; and a ton is 27.22 maunds. The tola of this table weighs 11.6638 grammes, and the maund 37.3242 kilograms. In the Calcutta market, the weights used are the factory maund of 74 lbs. 10 oz., and the bazar maund of this table.

Different weights used in Bengal reduced to sicca weights.

80	} sicca weight	1 Calcutta bazar seer,	96 sicca weight	} maund	1 Lucknow seer;
80		1 Serampore seer,	84 — —		1 Mirzapoor seer;
82		1 Hooghly seer,	96 — —		1 Allahabad seer;
84		1 Benares seer,	72 11.2.10.2.76		1 Calcutta factory seer.

The Bengal factory maund and its fractional parts, reduced to English avoirdupois weight, according to the standard received from Europe in 1787.

	<i>lbs.</i>	<i>oz.</i>	<i>dra.</i>		<i>lbs.</i>	<i>oz.</i>	<i>dra.</i>		<i>lbs.</i>	<i>oz.</i>	<i>dra.</i>
A Maund,	74	10	10.666	3 Seers,	5	9	9.599	2 Chitaks,	0	3	11.733
20 Seers,	37	5	5.333	2 "	3	11	11.733	1 "	0	1	13.866
10 "	18	10	10.666	1 "	1	13	13.866	The Bengal bazar maund is 10 per cent. better than the factory maund.			
5 "	9	5	5.333	3 Chitaks,	0	14	14.933				
4 "	7	7	7.466	4 "	0	7	7.466				

The *masa* and its subdivisions are used for stating the fineness, as well as the weight of the precious metals. Pure silver or gold is stated at 12 *massas* fine. The subdivision of the *tola* of 12 *mashas* into 96 *ruttees* of 4 *dhanas* each, agrees exactly with the English division of the pound of 24 carats into 96 grains, subdivided into quarters, which is used in stating the purity of gold; 6½ *ruttees* make 1 *anna*, and 8 *ruttees* make 1 *masa*; a rupee weighs 100 *ruttees* or 16 *annas*; a gold mohur 106½ *ruttees*.

Long Measures.—The unit of lineal measures is the *guz*, which differs very much in different provinces, and is constantly giving place to the English yard where education has obtained a footing.

8 Jan or jow make	1 angli or ungulee,	equal to	2 inch.
4 Angli	" 1 mutthi,	"	3 "
12 Angli	" 1 big bath,	"	9 "
24 Angli	" 1 bath, haut, or cubit,	"	18 "
2 Hath	" 1 guz or yard,	"	3 feet.
4 Hath	" 1 danda,	"	2 yards.
2000 Danda	" 1 koss, coss, or kros,	"	4000 "
4 Kros	" 1 yojan,	"	9½ miles.

In the northwest provinces and Ludiana, an *Ilahi gas* is 33 *ins.*, and 3 *guz* make 1 *ganteh* or *bans*, and 20 *bans* is 1 *jarib*. The Bengal coos is 100 danda.

Square measures.—These are derived from the linear, and the same terms are used:—

2 square Hath make	1 ganteh,	equal to	2½ square feet;
20 Ganteh	" 1 chattak,	5	" yards;
16 Chattak	" 1 kattah or cotta,	80	" yards;
20 Kattah	" 1 bigha or biggah,	1600	" yards;

This biggah measures 0.3306 of an acre, but the biggah in Benares contains 3600 square guz, or 3136 sq. yards, or 0.6479 of an acre.

Liquid and dry measures.—In India, as in China, measures of capacity are estimated by the weight of grain, salt, oil, or spirits they will hold, and represent so many *seer* or *maunds*. The following measures are used for grain, with their approximate value in English measures:—

5 Chittaks	make	1 kunki	equal to	0.5143 pinta.
16 Chittaks	"	1 seer	"	1.6457 "
4 Kunki	"	1 rek or raik	"	2.0571 "
4 Rek or 5 seer	"	1 pali or dron	"	8.2286 "
8 Pali	"	1 maund	"	8.2286 galls.
20 Pali	"	1 shali or swali	"	20.5714 "

A vessel holding a maund's weight of water measures 1½ bushel. A corgie or *coores* is 20 pieces or particulars, equal to 4 gundahs. White twist is sold by the *morah* of 20 hanks.

MADRAS.

Coins.—Accounts were formerly kept in star pagodas, fanams, and cash; 80 cash made a fanam, and 42 fanams made a pagoda; this was a small gold coin valued at 4 rupees, and worth 7s. 5½d. It is now rarely seen.

The *Weights* in use are in the following proportions:—

3 Tolas	} make	1 Pollam; =	1½ oz. avoiz.
5 Seers or 40 Pollams		1 Vis; =	3 lbs. 1 oz. 5.64 drs. av.
8 Vis		1 Maund; =	25 lbs. or 0.304 of a gov't. maund.
20 Maunds		1 Candy; =	500 lbs.

In mercantile dealings, the cutcha seer of 90 star pagodas or 11½ oz. av., the maund of 28 lbs. and the candy of 562½ lbs. are used; but in weighing brass and zinc, the seer is 9 oz., the maund 22½ lbs., and the candy 450 lbs. For cotton, the maund is 24 lbs. and candy 480 lbs. The seer of 2 lbs. is called *pucka weight*. At Tinnevely, Coimbatore, and the Northern Division, the weights vary in name and standard, and are still used in dealings in those places. In Coimbatore, 5 seers of 8 pollams each make a *vis*, and 6½ seers make 1 *took*.

The measures of capacity are computed by a reference to the weight of their contents. The *pudi*, or regulation measure, is a cylinder 8 *ins.* by 4 *ins.* wide; it contains 100 cubic inches, and holds 1.44 quarts. It is divided thus:—

8 Ollacks make	1 pudī;	weight in water is	3 lbs. 9 oz. 9 drs. 20 grs.
4 Ollacks	" ½ pudī.		
8 Pudi	" 1 mercial.	28	" 12 " 13 " 22 "
5 Mercial	" 1 para.		
80 Para	" 1 garce, or 18 quarters, or 336 Madras maunds.		

The garce for grain is 320 *lbs. av.* or 12½ Madras maunds, or 3½ Imperial maunds; the salt garce is equal to 4.4082 tons. The para of 5 mercial is a square measure 20 *ins.* square and 10 *ins.* deep. The seer of measure contains between 76 and 80 tolas of rice, or about 2 *lbs. av.* Two regulation measures are nearly equal to 3 seers; 22.18 measures equal 1 bushel. Salt is sold in Madras at 400 mercials, or 120 maunds, to the garce; and measured out by a measure 8 *ins.* square by 16.479 *ins.* deep, and holding 828½ cubic inches.

The long measures of the natives are gradually giving way to the yard; the cubit is 18 *ins.*; 8 *torak* make 1 *urrul*; 24 *urrul* make 1 *mulakoli*; and 4 *mulakoli* make 1 *dunnu*, equal to 3 *yds.* 4 *ins.* In Canara, the terms and proportionate lengths differ from these. The Tinnevely *kole* measures 20½ feet, and the Madura *kole* 24 feet. In land measure 1 square *kole* of 24 feet is 576 feet, and 100 *kole* or *guli* make 1 *cawni* of 6400 square *yds.* or 57,600 square *ft.* or 1.3223 acre. The *cawni* is also divided into *annas*, or sixteenths, of 3600 *sq. ft.*; a *munni* is 60 × 40 feet, and 24 *munnis* make 1 *cawni*; 484 *cawnis* equal a square mile of 640 acres.

In the enumeration of articles, 3 of any kind make a *patch*, and 10 *patch* make a *corye*. In Bengal, the enumeration is by 4 articles at a time, or 1 *gunda*, 5 of which make a *coori* or score.

BOMBAY.

Coins.—Accounts are still kept by some in rupees, quarters and raes, 25 raes making one anna; but the general usage is in rupees, annas and pies. The coins now minted are the same as at Calcutta, and the old native urdee, doorea, fuddea, and dugani pieces are not now known.

Weights.—The government weights are gradually coming into use. The following local ones are still used:—

4 Dhan or yav,	make	1 Ruktica or gunj.	
8 Ruktica	"	1 Masha	= 8.5 <i>grs.</i> troy.
4 Masha,	"	1 Tank	= 2.49 <i>dr.</i> av.
72 Tanks or 80 pice	"	1 Seer	= 11½ <i>oz.</i> av.
40 Seers	"	1 Maund	= 28 <i>lbs.</i>
20 Maunds	"	1 Candi	= 560 <i>lbs.</i>

The Bombay maund is 0.34 Imp. maund, and 1 of the latter is 2.939 Bombay maunds. At different places in this presidency, the candy of 20 maunds varies from 560 *lbs.* up to 3055 *lbs.*—the last is in use at Sattara.

At Poona, the weights are somewhat different:—

5 seers	make	1 puseeri, of	9.857 <i>lbs.</i> av.
8 puseeri	"	1 maund, of	78.856 <i>lbs.</i> av.
3 maund	"	1 palla, of	236.57 <i>lbs.</i> av.

The seer is 80 old rupees, or 76.658 tolas; maunds of 12½ and 14 seers are also used in the Poona district.

At Kurrachi, the weights used are:—

4 Kasira,	make	1 Dokra,	= 7½ <i>dra.</i> av., or 1.08 tola.
4½ Dokras,	"	1 Anna,	= 2 <i>oz.</i> 4.86 tola.
72 Dokras or 16 annas,	"	1 Pucca seer,	= 2 <i>lbs.</i> , 77.78 tola.
40 Pucca seers,	"	1 Maund,	= 80 <i>lbs.</i> , 38.9 imp. seers.
3 Maunds,	"	1 Potea,	= 120 <i>lbs.</i>

1 Bombay maund is 14 Kurrachi seers, and 1 Bombay candy is 7 Kurrachi maunds; 35 of the last equal 100 Bombay maunds. Silk is sold by the pucca seer of 15 seers to 28 *lbs. av.* The Kurrachi weights approach very nearly to the Imperial, 36 seers or maunds equaling 35 of the British-Indian.

At Surat, the seer now weighs 14.4 *oz. av.*, and the maund only 36 *lbs. av.*; hence 7 seers or maunds at Surat are equal to 9 at Bombay; and 1 seer at Surat equals 0.4375 Imp. seer, 1 of which weighs 2½ Surat seers.

The small or goldsmith's weights are given in the table of the British-Indian weights, but at Bombay the old terms still maintain themselves; 20 *vasses* make 1 *ruttee*; 3 *ruttees* make 1 *waal*; 24 *ruttees* make 1 *tank*; and 32 *waals* make 1 *tola*. The *masha*, *ruttee* and *dhan* are used in assaying metals; 10 *mashas* fine signifies ⅙ths pure, or 10 *oz.* touch of the English mint.

Goldsmith's weights in Guzerat.

6 Chows or chawula	} make	1 Ruttee;	=	1.916 <i>grs. troy.</i>
8 Ruttees or goonj		1 Waal;	=	5.750 "
16 Valls or waals		1 Guddeanna;	=	92 "
2 Guddeannas		1 Tola;	=	184 "

Measures of length are already given under BENGAL. In Bombay, half a *haut* or cubit is called *vent*, and the measuring rod or *katee* is 9.4 feet long. In Gujerat, 5 *haut* make 1 *vaso* or rod. The table of cloth measure in Bombay is, 2 *ungulee* make 1 *tasu* of 1½ *in.*, and 24 *tasu* make a *guz* of 27 inches.

Square measures vary much in western India. In Bombay and Poona,

84½ Square Haut,	make 1 Katee,	about 88.35 square feet.
20 Kathiyo,	" 1 Vaso or pound;	
20 Paund	" 1 Biggah,	about 3926½ square yards.
120 Biggah,	" 1 Chahur.	

In Gujerat, the terms are *khund*, *padial*, *padat*, *vishwasi*, *vaso*, and *biggah*, of which 20 of a lower term uniformly make 1 of a higher term. In the North-west provinces,—

20 Uswansi or Nanwansi,	make 1 Saswansi,	=	24.5 square inches.
20 Saswansi or Tanwansi,	" 1 Kachwansi,	=	5.4 square feet.
20 Kachwansi,	" 1 Biswansi,	=	7.56 square yards.
20 Biswansi,	" 1 Biswa,	=	151½ "
20 Biswa,	" 1 Biggah,	=	3025 "

An English acre is 1.6 Delhi biggah; the Orissa biggah is just an acre; and the Tirhoot biggah of 400 square *lagi* is 4225 square yards.

Liquid and dry measures at Bombay differ for grain and salt. The first are:—

2 Tipri	make 1 Seer,	=	11½ <i>oz. av.</i> of water or 19.41 cubic inches.
4 Seers,	" 1 Paili,	=	2½ <i>lbs. av.</i> , or 77.637 "
16 Paili,	" 1 Para,	=	44½ "
8 Para,	" 1 Kandi,	=	358½ "
25 Para,	" 1 Muda,	=	10 cwt., or 3.5943 cubic feet.

For salt, 10½ *advali* make 1 *para* or *fara* of 5.798 galls.; 100 *fara* make 1 *ano*, holding 72.474 bushels; and 16 *anna* make 1 *ras* of 144.948 quarters. There is a seer for liquids of 60 *tolas* or 1.234 *gms.* Rice is sold in the husk by the *mura* of 25 *para*. The bag of rice weighs 6 maunds, or 20 to 24 *advalis*. At Poona, the measures are:—

8 Chipteen	make	1 Seer;
4 Seers	"	1 Paili;
48 Seers, or 12 Paili,	"	1 Maund;
2½ Maunds, or 120 Seers,	"	1 Palla, equal to 3.4487 Imp. maunds.
8 Palla	"	1 Kandi, " 27.6 " "

In the Bombay dockyards, in measuring timber, 12 cubic feet and 1216 inches make one covit or candi; 3 covits and 18½ vassas make 1 ton of 50 cubic feet; 26 cubic feet and 206 inches equal 100 guz, by which planks are sold.

Section 9.

CEYLON.

ACCOUNTS are kept in English money, and English coins all circulate, as well as rupees and their divisions. Some old coins are still in circulation, as stivers, fanams, and rix dollars; 4 pice = 1 fanam; 12 fanams or 48 pice = 1 rix dollar of 48 stivers, worth 1s. 6d. or 144 chalees. In exchanges, 4 English or 3 Dutch chalees = 1 pice. A ducatoon is 80, a Dutch shilling is 7½, a Negapatam pagoda is 90, and a rupee is 30 stivers. A dollar is worth 37 to 39 fanams, a rupee is 17 fanams, or 2s. stg. in common transactions; and a star pagoda is 59 to 61½ fanams.

In *weights*, a bahr or candy is 523 lbs. av., or 480 lbs. Dutch troy; another candy weight is 500 lbs. av.; a bag is 170 lbs. av.; a garce is 925½ lbs. av. A bale of cinnamon is 102 lbs. av. gross, or 87 lbs. nett; an anna of rice in the husk is 260½ lbs. av.

The *dry measures* are:—

4 cut Chundoos	make	1 cut measure or seer;
4½ Seers	"	1 Corney;
2½ Mercals	"	1 Parah = 6½ wine gallons;
8 Parahs	"	1 Ammonam;
9½ Ammonams or 1800 measures	"	1 Last.

Oil, milk, and ghee are sold by chundoos and seers. A measure of salt weighs 44 lbs., and of coffee and pepper 30 lbs. av. Wine and arrack are measured by the leaguer of 75 welts or 125 imperial gallons, each gallon containing 4½ quarts, or 2½ canades.

Section 10.

GREAT BRITAIN.

THE gold coins are the sovereign and half-sovereign; the silver are the crown, florin, shilling, sixpence and threepence; and of copper or bronze, the penny, half-penny and farthing.

4 Farthings	} make	1 penny;	20 Shillings	} make	1 pound or sovereign;
12 Pence		1 shilling;	5 Shillings		1 crown;
2 Shillings		1 florin;	21 Shillings		1 guinea.

A sovereign weighs 123.274 grs. troy, and is 11 parts gold and 1 of copper; the florin weighs 174.55 grs., and a shilling 87.27 grs.; their alloy is 3 parts copper in 37 parts silver. The letters *£ s. d.* are the initials of the Latin words *liber*, *solidus*, and *denarius*.

BRITISH AND AMERICAN WEIGHTS AND MEASURES.

The standard of weights and measures in the United States is, a few local state regulations excepted, the same as in Great Britain.

1.—*Imperial troy weight*.—This weight derives its name from Troy Novant, the monkish name for London in A.D. 800. The standard is one cubic inch of distilled water, at 62° Fahrenheit's thermometer, the barometer being 30 inches; it weighs 252.458 troy grains.

grs.	drms.	oz.	lb.	Fr. grammes.
24	= 1			= 1.5552
480	= 20	= 1		= 31.1027
5760	= 240	= 12	= 1	= 373.2330

Troy weight is used in weighing gold, silver, jewels, &c., and in philosophical experiments. The *carat* is divided into 4 carat-grains, and is used for weighing diamonds. An ounce troy is 151½ carats; a carat is nearly equal to 3½ grains. In expressing the fineness of gold by *carats*, the term rather denotes a proportion than a weight. Thus gold 22 carats fine, signifies an alloy such that the proportion of the weight of pure gold to that of the whole weight, is as 22 to 24; or such that it contains 22 parts by weight of pure gold, and 2 parts of some inferior metal; a gold carat is 240 *grs.*

2.—*Apothecaries' weight*.—Standard is the same as in troy weight, with the ounce divided into 8 drachms and 24 scruples:—

grs.	scr.	drms.	oz.	lb.	Fr. gram.
20	= 1				= 1.296
60	= 3	= 1			= 3.888
480	= 24	= 8	= 1		= 31.102
5760	= 288	= 96	= 12	= 1	= 373.233

Medicines are compounded by this weight; but drugs are usually bought and sold by avoirdupois weight.

3.—*Apothecaries' Fluid Measure*.—A minim is about 2 drops, a fluid drachm a tea-spoonful, and a fluid ounce two table-spoons full.

60 minims	make 1 drachm,	= 2 dra. av.
8 drachms	" 1 ounce,	= 1 oz. av.
20 ounces	" 1 pint,	= 1½ lb. av.
8 pints	" 1 gallon,	= 10 lbs. av.

4.—*Imperial Avoirdupois weight*.—This weight is so called from the Norman word *avoirs* or *averia*, meaning goods and chattels, and *pois*, weight. Standard is the same as in troy weight; and one avoirdupois pound = 7000 troy grains, or the weight of 27.7274 cubic inches, or one-tenth of an imperial gallon. The terms are:—

dra.	oz.	lbs.	grs.	cuts.	ton.	
16	= 1					= 28.346 gram.
256	= 16	= 1				= 453.544 "
7,168	= 448	= 28	= 1			= 12,699 kilograms.
28,672	= 1,792	= 112	= 4	= 1		= 50.796 "
573,440	= 35,840	= 2240	= 80	= 20	= 1	= 1015.920 "

The stone is 14 *lbs.*, except for butcher's meat and fish, which is 8 *lbs.*; 8 stone of the former is a cwt. A stone of glass is 5 *lbs.*, and a seam of glass is 24 stone, or 120 *lbs.* A bushel of wheat weighs 60 *lbs.*, of barley 47 *lbs.*, and of oats 38 *lbs.* A gallon of flour weighs 7 *lbs.*, a bushel 56 *lbs.*, and a barrel 196 *lbs.*; 10 sacks of coal, or 2,240 *lbs.* make a ton; 360 *lbs.* or 6 bushels of wheat should produce 1 sack of flour, and make 100 quartern loaves, each 4 *lbs.* 5½ *oz.* Hay and straw are sold by the load of 36 trusses; a truss of hay weighs 56 *lbs.*, and of straw

36 lbs. In weighing wool, 7 lbs. make a clove; 2 cloves a stone; 2 stones a tod; $6\frac{1}{2}$ tods a wey; 2 weys a sack; 12 sacks a last, which is equal to 39 cwt.; 240 lbs. make a pack.

Relative values of the Troy and Avoirdupois Pound.

Troy lb.	1	2	3	4	5	6	7	8	9	175 oz.
Avoir. lb.	0.823	1.646	2.469	3.291	4.114	4.937	5.760	6.583	7.400	192 oz.
Avoir. lb.	1	2	3	4	5	6	7	8	9	144 lbs.
Troy lb.	1.215	2.431	3.646	4.861	6.076	7.292	8.507	9.723	10.937	175 lbs.

4.—*English lineal measures.*—The unit is the yard, taken from the average of oscillations of the pendulum in the latitude of London; it is divided into feet and inches; the multiples of the yard are the pole, furlong and mile:—

Inches.	Feet.	Yards.	Poles.	Furlongs.	Miles.	Metres.
1	0.083	0.028	0.00505	0.00012626	0.0000157828	
12	1	0.333	0.06060	0.00151515	0.00018939	0.3048
36	3	1	0.1818	0.004545	0.00056818	0.9144
198	16.5	5.5	1	0.025	0.003125	5.0291
7920	660	220	40	1	0.125	201.1652
63,360	5280	1760	320	8	1	1609.3059

Table showing the Relative Values of British and other Road Measures.

Countries.	Measure.	100 Eng-lish miles equal	Countries.	Measure.	100 Eng-lish miles equal
Arabia,	Mile,	81.939	Ireland,	Mile,	78.571
Brabant,	League,	28.966	Japan,	Ri,	40.816
China,	Li,	278.481	Netherlands,	Mile metrical,	161.024
Dantzic,	Mile,	20.767	Persia,	Parasang,	28.918
Denmark,	Mile,	21.348	Poland,	Long mile,	21.725
England,	Geographical mile,	86.948		Short mile,	28.966
Flanders,	Mile,	25.641	Portugal,	League,	26.035
France,	Kilometre,	161.024	Prussia,	Mile,	21.367
	League of 2,000 toises,	41.285	Rome,	Mile,	108.108
	Geographical league,	36.214	Russia,	Metrical mile,	161.024
	Marine league,	28.966	Scotland,	Geographical mile,	86.913
Germany,	Geographical mile,	21.725		Werst,	150.814
	Short mile,	17.381	Spain,	Mile,	88.709
	Long mile,	25.659	Sweden,	League, common,	23.732
Hamburg,	Mile,	21.348		League, judicial,	37.072
Hanover,	Mile,	15.226	Switzerland,	Mile,	15.042
Holland,	Mile,	21.725		Mile,	19.228
Hungary,	Mile,	19.313	Tuscany,	Mile,	97.845
			Turkey,	Berrie,	96.885

A league is 3 miles; and 60 geographical miles, or $69\frac{1}{2}$ common miles, make a degree. A palm is 3 inches, a hand is 4 inches, a span 9 inches; a military pace is $2\frac{1}{2}$ feet, a geometrical pace 5 feet, a toise in France 6.39 feet, and a fathom 6 feet; a cubit is 18 inches, but the cubit of the Scriptures is about 22 inches. The inch is generally divided on scales into tenths, but in squaring the dimensions of works it is divided into 12 lines, which are subdivided into 12 seconds, and

then again into 12 thirds, but these duodecimals are now giving place to decimals. Mechanics often divide it into eighths, quarters, and halves. In measuring cloth, 1 nail is $2\frac{1}{4}$ inches, and 4 nails or 9 inches is a quarter, and 5 quarters an ell of $3\frac{1}{2}$ feet; 3 quarters is a Flemish ell of $2\frac{1}{2}$ feet, and 6 quarters a French ell of $4\frac{1}{2}$ feet.

In reckoning <i>Cotton Yarn</i> ,			In reckoning <i>Linon Yarn</i> ,		
54 inches	make	1 thread.	90 inches	make	1 thread.
80 threads	"	1 skein or rap.	120 threads	"	1 cut.
7 skeins	"	1 hank.	2 cuts	"	1 heer.
18 hanks,	"	1 spindle.	6 heers	"	1 hasp.
			4 hasps	"	1 spindle.

4.—*Measures of superficies.*—The unit is the yard, subdivided into feet and inches; 144 square inches make one square foot. For land measure, the multiples of the yard are the pole, rood, and acre; $30\frac{1}{2}$ (the square of $5\frac{1}{2}$) square yards being a pole, &c.

<i>Square feet.</i>	<i>Sq. yards.</i>	<i>Poles.</i>	<i>Roods.</i>	<i>Acres.</i>	<i>Sq. Metres.</i>
1	0.1111	0.00367309	0.000091827	0.000022957	0.0929
9	1	0.0330579	0.000826448	0.000206612	0.8361
272.25	80.25	1	0.025	0.00625	25.2916
10,890	1210	40	1	0.25	1011.6662
43,560	4840	160	4	1	4046.6648

Land is usually measured by a chain of 4 poles or 22 yards, which is divided into 100 links, each of 7.92 inches long; 10 square chains make an acre; and 640 acres one square mile. The square foot contains 183.346 circular inches; and a circular foot contains 113.097 square inches. Flooring and roofing are measured by the square of 100 feet; bricklayer's work by the rod of $16\frac{1}{2}$ feet or 272 square feet, and $1\frac{1}{2}$ brick thick.

5.—*Measures of volume.*—Solids are measured by cubic yards, feet, and inches; 1728 cubic inches make a cubic foot, and 27 cubic feet a cubic yard. A cubic foot of water weighs $62\frac{1}{2}$ lbs.; 108 cubic feet makes a stack of wood, and 128 makes a cord; 40 cubic feet of rough, or 50 feet of hewn timber, makes a load; 18 cubic feet of earth, or 17 of clay, is a ton; 50 cubic feet in English ships, and 40 cubic feet in American ships, are usually reckoned to be a ton of measurement goods.

For all liquids, the standard is the imperial gallon, measuring 277.274 cubic inches, and weighing 10 avoirdupois pounds of distilled water. A cubic foot of water weighs 6.232 lbs., and contains 6.232 galls.; 100 cubic inches of air weighs 32.795 grains; water is 82.0 times heavier than air. The parts of the gallon are quarts, pints, and gills; its multiples are pecks, bushels, and quarters. The following table is according to the new imperial liquid and dry measures, for there is some difference between the new and old:—

<i>Gills.</i>	<i>Pints.</i>	<i>Quarts.</i>	<i>Gallons.</i>	<i>Pecks.</i>	<i>Bushels.</i>	<i>Quarters.</i>	<i>Lbs of water.</i>
4	1	0.5	0.125	0.0625	0.015625	0.001953125	$1\frac{1}{2}$
8	2	1	0.25	0.125	0.03125	0.00390625	$2\frac{1}{2}$
32	8	4	1	0.5	0.125	0.015625	10
64	16	8	2	1	0.25	0.03125	20
256	64	32	8	4	1	0.125	80
2048	512	256	64	32	8	1	640

Several other measures are used for liquids, as the ale firkin of 8 gallons, the beer firkin of 9 galls., the kilderkin of 18, and the barrel of 36 gallons; a hogshead is $1\frac{1}{2}$ barrel, or 54 galls.; a puncheon 2 barrels, a butt 4 barrels, and a tun 8 barrels. The old wine gallon of 231 cubic inches was less than the beer gallon by 51 inches; by it 42 gallons made a tierce, 63 gallons a hogshead, 84 gallons a puncheon, 2 hds. a pipe, and 2 pipes a tun. A rundlet is 18 gallons, and an anker 9; a pottle is half a gallon, and a coom is half a quarter or 4 bushels. A bushel measure is 8 inches deep by 18.789 inches diameter, and contains 2218.192 cubic inches. In heaped measure, the cone on the bushel must be 6 inches high; 3 heaped bushels made a sack of coals, and 12 sacks a chaldron; this usage is now abolished.

Comparative Table of French and English Weights and Measures.

MEASURES OF LENGTH.

<i>English</i>	<i>French</i>
1 inch,	2.539954 centimetre
1 foot,	3.0479449 decimetre
1 yard imperial,	0.91438348 metre
1 fathom,	1.82876696 metre
1 pole,	5.02911 metres
1 furlong,	201.16437 metres
1 mile,	1609.3149 metres
<i>French</i>	<i>English</i>
1 millimetre,	0.03937 inch
1 centimetre,	0.393708 inch
1 decimetre,	3.937079 inches
1 metre,	{ 39.37079 inches
	{ 3.2808992 feet
	{ 1.093633 yard
1 kilometre, .....	.621 mile
1 myriametre, ...	6.2138 miles

SQUARE MEASURE.

<i>English</i>	<i>French</i>
1 yard square,	0.836097 metre square
1 rod,	25.291939 metres square
1 rood,	10.116775 ares
1 acre,	0.404671 hectare
<i>French</i>	<i>English</i>
1 metre square,	1.196033 yard square
1 are,	0.008845 rood
1 hectare,	2.473614 acres

SOLID MEASURE.

<i>English</i>	<i>French</i>
1 pint,	0.567932 litre

1 quart,	1.135364 litre
1 gallon imperial	4.8434579 litres
1 peck,	9.0869159 litres
1 bushel,	36.347664 litres
1 sack,	1.09043 hectolitre
1 quarter,	2.907813 hectolitres
1 chaldron,	13.08516 hectolitres
<i>French</i>	<i>English</i>
1 litre,	{ 1.760773 pint
	{ 0.2200967 gallon
1 decalitre,	2.2009667 gallons
1 hectolitre,	22.009667 gallons

WEIGHTS.

<i>English Troy</i>	<i>French</i>
1 grain,	0.06479 gramme
1 pennyweight,	1.55456 gramme
1 ounce,	31.0913 grammes
1 pound,	0.3730956 kilogram.
<i>English Avoirdupois</i>	<i>French</i>
1 drachm,	1.7712 gramme
1 ounce,	28.3384 grammes
1 pound av. imp.	0.4534148 kilogra.
1 cwt.,	50.78246 kilogram
1 ton,	1015.649 kilogrammes
<i>French</i>	<i>English</i>
1 gramme, ...	{ 15.438 grains troy
	{ 0.643 pennyweight
	{ 0.03216 ounce troy
1 kilogramme	{ 2.68027 pounds troy
	{ 2.20548 pounds av.

Useful Weights, Measures, &c., chiefly used in England.

1 tub of butter weighs, ..84 pounds	24 sheets of paper, .....1 quire
1 firkin of butter, .....56 "	20 quires, or 480 sheets...1 ream
soap, .....64 "	24 sheets of pr'ting paper, 1 quire
1 fodder of lead, .....19½ to 22 cwt.	21½ quires " " 1 ream
1 last of salt, .....18 barrels	1 cade of herrings, .....500 fish
gunpowder, ....24 "	1 of sprats, .....1000 "
potash, beer,	12 articles, .....1 dozen
codfish, meal,	12 dozen, .....1 gross
soap, or tar, ....12 "	13 articles, .....1 long dozen
feathers, .....17 cwt.	20 "1 score
1 ton of oil, vegetable, ..236 gallons	5 score, .....1 hundred
animal, .....252 "	6 "1 long hundred
wool, .....28 pounds	80 deals, .....1 quarter
1 sack of wool, .....364 "	90 words in chancery, }
1 barrel of anchovies, ....30 "	80 " in exchequer, } 1 folio
soap, .....256 "	72 " common law, }
herrings, .....32 gallons	5 doz. skins parchment, 1 roll
1 pipe of Madeira wine, 115 "	A ship's log is about .....75 fathoms
Cape wine, .....92 "	1 bale of cotton Brazil average 171 lbs.
Teneriffe wine, 100 "	" Sea Island, ...330 "
Port wine, ....115 "	" Mobile, .....415 "
Lisbon wine, ..117 "	" Upland, .....333 "
1 butt of Sherry wine, ..100 "	" Egyptian, ....215 "
1 hhd of Claret, .....46 "	" W. Indian, ...166 "
1 dicker of hides, .....10 skins	" E. Indian, ....342 "
1 last of hides, .....20 dickers	" China, .....133 "
1 dicker of gloves, .....10 doz. pair	

Section 11.

UNITED STATES OF AMERICA.

THE federal money is based upon a decimal arrangement, of which the dollar is the unit; the American dollar contains 371½ *grs.* of pure silver, or 416 *grs.* standard silver. The gold coins are the eagle, double, half, and quarter eagle, and 3 and 1 dollar pieces, respectively equal to 10, 20, 5, 2½, 3, and 1 dollars; the silver coins are dollars, half and quarter dollars, dimes, half dimes and 3 cents; with copper cents.

The eagle contains 246.1 *grs.* of pure gold; the double-eagle weighs 516 grains, and the smaller pieces in proportion, the dollar being 25.8 *grs.* in weight. The law of Feb. 21, 1853, regulating the silver currency, provided that the weight of the half-dollar shall be 192 grains, of the quarter 96 grains, and of the dime and half-dime 38.4 grains and 19.2 grains; this law was passed with the intention of retaining the silver currency in the country, by making the pieces lighter than the proportions of the dollar in other countries. The 3 cent silver piece is ⅔ths silver and ⅓th copper, weight 12½ *grs.* The cent weighs 72 grains, and consists of 88 parts copper and 12 of nickel.

CHAPTER VII.

TABLES ON PRICES, EXCHANGES, &c.

Section 1.

COMPARISON OF PRICES.

Table 1.—Tables to ascertain the Cost of China Silk in London.

Extracted from the Tables by C. D. Snooks.

The following Tables have been calculated upon the basis of the data furnished by the annexed pro-forma accounts, which will be seen to embrace all the charges to which raw silk is liable, from its purchase in China to its sale in London. When any of these charges are not incurred, a small deduction from the tabular price may be readily made; for instance, the omission of the charge for inspection in China will reduce the cost as given in the Tables nearly one per cent., or 1d. on 8s. 9d.

The following small Table is appended, showing, to the nearest farthing, the charge upon each lb. at the different rates of freight, allowing, as a fair average, 7 bales of 103 lbs. each to one ton of 50 cubic feet; and from this Table the cost, as given in the others, can be corrected for any rate of freight.

At £3 per Ton of 50 feet.....	1d. per lb.	At £6 per Ton of 50 feet.....	2d. per lb.
" £3 10s. or £4 "	..... 1½d. "	" £6 10s. or £7 "	..... 2½d. "
" £4 10s. "	..... 1½d. "	" £7 10s. "	..... 2½d. "
" £5 or £5 10s. "	..... 1½d. "	" £8 "	..... 2½d. "

Pro-forma Invoice of 10 bales of Raw Silk,

Shipped from Shanghai to London.

A D C			Dolls.	cts.
1 @ 10	10 bales TRATLER,		3040	00
	weighing net 8 piculs, at \$80 dollars per picul,			
	CHARGES.			
	Go-down rent, boat and coolie-hire,	dols. cts.		
	Mats, matting, and marking,	5 00		
	Inspecting, 1 per cent,	2 65		
	Fire insurance, ½ per cent,	30 40		
		3 80	41	85
	Commission, 2½ per cent. on \$3081.85.		3081	85
			77	46
		Dollars	8159	31

Pro-forma Account Sale of the same.

A D C			£.	s.	d.
1 @ 10	10 bales TRATLER,		931	10	0
	weighing 1035 lb., at 18s. per lb.,				
	CHARGES.				
	Insurance on £900, at 60s. % Policy £1 7s.,	£ s. d.			
	Freight on 73 ft. 6 in. at £7 10s. per 50 feet,	28 7 0			
	Dock charges, including warehouse rent, ...	11 0 6			
	Sale expenses, at 3d. per bale, 2s. 6d.; Customs	5 18 6			
	entry 2s. 6d.,	0 5 0			
	Fire insurance on £931 10s. at ½ per cent.,	2 6 7			
	Brokerage, " ¼ "	4 13 2			
	Commission, " 2½ "	23 5 9	75	16	6
		Net proceeds	855	13	6

Giving an Exchange at 5s. 5d.

1066½ lb.
1035 lb.

31½ lb. loss in weight = 3 per cent.

EXCHANGE at 4s 2d			Cost per cwt. total	EXCHANGE at 4s 6d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.*		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.*
per B. s. d.	per B. s. d.	per B. s. d.	Dolls.	per B. s. d.	per B. s. d.	per B. s. d.
7 9½	7 10½	7 11½	210	8 4½	8 5½	8 7
7 11½	8 0½	8 1½	215	8 7	8 8	8 9½
8 1½	8 2½	8 3½	220	8 9½	8 10½	8 11½
8 4	8 4½	8 6	225	8 11½	9 0½	9 2
8 6	8 7	8 8	230	9 2	9 3	9 4½
8 8½	8 9	8 10½	235	9 4½	9 5½	9 6½
8 10½	8 11½	9 0½	240	9 6½	9 7½	9 8½
9 0½	9 1½	9 2½	245	9 9	9 9½	9 11
9 2½	9 3½	9 4½	250	9 11½	10 0	10 1½
9 4½	9 5½	9 6½	255	10 1½	10 2½	10 3½
9 7	9 7½	9 8½	260	10 3½	10 4½	10 6
9 9	9 10	9 10½	265	10 6½	10 7	10 8½
9 11½	10 0	10 1	270	10 8½	10 9½	10 10½
10 1½	10 2½	10 3	275	10 10½	10 11½	11 0½
10 3½	10 4½	10 5½	280	11 1	11 2	11 3
10 5½	10 6½	10 7½	285	11 3½	11 4½	11 5½
10 7½	10 8½	10 9½	290	11 5½	11 6½	11 7½
10 9½	10 10½	10 11½	295	11 8	11 9	11 9½
11 0	11 1	11 1½	300	11 10½	11 11½	12 0
11 2½	11 3	11 3½	305	12 0½	12 1½	12 2½
11 4½	11 5½	11 6½	310	12 3	12 3½	12 4½
11 6½	11 7½	11 8	315	12 5½	12 6½	12 7½
11 8½	11 9½	11 10	320	12 7½	12 8½	12 9½
11 10½	11 11½	12 0½	325	12 9½	12 10½	12 11½
12 0½	12 1½	12 2½	330	13 0½	13 1	13 1½
12 3	12 3½	12 4½	335	13 2½	13 3½	13 4½
12 5	12 6	12 6½	340	13 4½	13 5½	13 6½
12 7½	12 8½	12 8½	345	13 7	13 8	13 8½
12 9½	12 10½	12 10½	350	13 9½	13 10½	13 11
12 11½	13 0½	13 0½	355	13 11½	14 0½	14 1½
13 1½	13 2½	13 3	360	14 2	14 3	14 3½
13 3½	13 4½	13 5	365	14 4½	14 5½	14 5½
13 6	13 6½	13 7½	370	14 6½	14 7½	14 8
13 8	13 9	13 9½	375	14 9	14 9½	14 10½
13 10½	13 11	13 11½	380	14 11½	15 0½	15 0½
14 0½	14 1½	14 1½	385	15 1½	15 2½	15 3
14 2½	14 3½	14 3½	390	15 3½	15 4½	15 5½
14 4½	14 5½	14 5½	395	15 6½	15 7	15 7½
14 6½	14 7½	14 7½	400	15 8½	15 9½	15 9½
14 9	14 9½	14 10	405	15 10½	15 11½	16 0
14 11	15 0	15 0	410	16 1	16 2	16 2½
15 1½	15 2	15 2½	415	16 3½	16 4½	16 4½
15 3½	15 4½	15 4½	420	16 5½	16 6½	16 6½
15 5½	15 6½	15 6½	425	16 8	16 9	16 9
15 7½	15 8½	15 8½	430	16 10½	16 11½	16 11½
15 9½	15 10½	15 10½	435	17 0½	17 1½	17 1½
15 11½	16 0½	16 0½	440	17 3	17 3½	17 4
16 2	16 3	16 2½	445	17 5½	17 6½	17 6½
16 4	16 5	16 5	450	17 7½	17 8½	17 8½

Deduct ¼ P lb. for freight from Canton, at 80 dollars P 10 cwt.

* \$100 per 10 cwt.; Southampton charges, 3s. per bale; insurance, 35s. per cent.

EXCHANGE at 4s 7d			Cost per Ton	EXCHANGE at 4s 3d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.	Dolls.	per lb. s. d.	per lb. s. d.	per lb. s. d.
8 6 $\frac{1}{2}$	8 7 $\frac{1}{2}$	8 9	210	8 8 $\frac{1}{2}$	8 9 $\frac{1}{2}$	8 10 $\frac{1}{2}$
8 9	8 9 $\frac{1}{2}$	8 11 $\frac{1}{2}$	215	8 10 $\frac{1}{2}$	8 11 $\frac{1}{2}$	9 1 $\frac{1}{2}$
8 11 $\frac{1}{2}$	9 0 $\frac{1}{2}$	9 1 $\frac{1}{2}$	220	9 1 $\frac{1}{2}$	9 2	9 3 $\frac{1}{2}$
9 1 $\frac{1}{2}$	9 2 $\frac{1}{2}$	9 4	225	9 3 $\frac{1}{2}$	9 4 $\frac{1}{2}$	9 6
9 4	9 4 $\frac{1}{2}$	9 6 $\frac{1}{2}$	230	9 6	9 6 $\frac{1}{2}$	9 8 $\frac{1}{2}$
9 6 $\frac{1}{2}$	9 7 $\frac{1}{2}$	9 8 $\frac{1}{2}$	235	9 8 $\frac{1}{2}$	9 9 $\frac{1}{2}$	9 10 $\frac{1}{2}$
9 8 $\frac{1}{2}$	9 9 $\frac{1}{2}$	9 11	240	9 10 $\frac{1}{2}$	9 11 $\frac{1}{2}$	10 1
9 11	10 0	10 1 $\frac{1}{2}$	245	10 1	10 2	10 3 $\frac{1}{2}$
10 1 $\frac{1}{2}$	10 2 $\frac{1}{2}$	10 3 $\frac{1}{2}$	250	10 3 $\frac{1}{2}$	10 4 $\frac{1}{2}$	10 5 $\frac{1}{2}$
10 3 $\frac{1}{2}$	10 4 $\frac{1}{2}$	10 5 $\frac{1}{2}$	255	10 6	10 6 $\frac{1}{2}$	10 8 $\frac{1}{2}$
10 6	10 7	10 8 $\frac{1}{2}$	260	10 8 $\frac{1}{2}$	10 9 $\frac{1}{2}$	10 10 $\frac{1}{2}$
10 8 $\frac{1}{2}$	10 9 $\frac{1}{2}$	10 10 $\frac{1}{2}$	265	10 10 $\frac{1}{2}$	10 11 $\frac{1}{2}$	11 0 $\frac{1}{2}$
10 10 $\frac{1}{2}$	10 11 $\frac{1}{2}$	11 0 $\frac{1}{2}$	270	11 1	11 2	11 3 $\frac{1}{2}$
11 1	11 2	11 3 $\frac{1}{2}$	275	11 3 $\frac{1}{2}$	11 4 $\frac{1}{2}$	11 5 $\frac{1}{2}$
11 3 $\frac{1}{2}$	11 4 $\frac{1}{2}$	11 5 $\frac{1}{2}$	280	11 5 $\frac{1}{2}$	11 6 $\frac{1}{2}$	11 8
11 5 $\frac{1}{2}$	11 6 $\frac{1}{2}$	11 7 $\frac{1}{2}$	285	11 8 $\frac{1}{2}$	11 9 $\frac{1}{2}$	11 10 $\frac{1}{2}$
11 8 $\frac{1}{2}$	11 9	11 10	290	11 10 $\frac{1}{2}$	11 11 $\frac{1}{2}$	12 0 $\frac{1}{2}$
11 10 $\frac{1}{2}$	11 11 $\frac{1}{2}$	12 0 $\frac{1}{2}$	295	12 1	12 2	12 3 $\frac{1}{2}$
12 0 $\frac{1}{2}$	12 1 $\frac{1}{2}$	12 2 $\frac{1}{2}$	300	12 3 $\frac{1}{2}$	12 4 $\frac{1}{2}$	12 5 $\frac{1}{2}$
12 3 $\frac{1}{2}$	12 4 $\frac{1}{2}$	12 5	305	12 5 $\frac{1}{2}$	12 6 $\frac{1}{2}$	12 7 $\frac{1}{2}$
12 5 $\frac{1}{2}$	12 6 $\frac{1}{2}$	12 7 $\frac{1}{2}$	310	12 8 $\frac{1}{2}$	12 9 $\frac{1}{2}$	12 10 $\frac{1}{2}$
12 8	12 8 $\frac{1}{2}$	12 9 $\frac{1}{2}$	315	12 10 $\frac{1}{2}$	12 11 $\frac{1}{2}$	13 0 $\frac{1}{2}$
12 10 $\frac{1}{2}$	12 11 $\frac{1}{2}$	13 0	320	13 1	13 2	13 3 $\frac{1}{2}$
13 0 $\frac{1}{2}$	13 1 $\frac{1}{2}$	13 2 $\frac{1}{2}$	325	13 3 $\frac{1}{2}$	13 4 $\frac{1}{2}$	13 5 $\frac{1}{2}$
13 3	13 4	13 4 $\frac{1}{2}$	330	13 5 $\frac{1}{2}$	13 6 $\frac{1}{2}$	13 7 $\frac{1}{2}$
13 5 $\frac{1}{2}$	13 6 $\frac{1}{2}$	13 7	335	13 8 $\frac{1}{2}$	13 9	13 10
13 7 $\frac{1}{2}$	13 8 $\frac{1}{2}$	13 9 $\frac{1}{2}$	340	13 10 $\frac{1}{2}$	13 11 $\frac{1}{2}$	14 0 $\frac{1}{2}$
13 10	13 11	13 11 $\frac{1}{2}$	345	14 1	14 2	14 2 $\frac{1}{2}$
14 0 $\frac{1}{2}$	14 1 $\frac{1}{2}$	14 2	350	14 3 $\frac{1}{2}$	14 4 $\frac{1}{2}$	14 5 $\frac{1}{2}$
14 2 $\frac{1}{2}$	14 3 $\frac{1}{2}$	14 4 $\frac{1}{2}$	355	14 5 $\frac{1}{2}$	14 6 $\frac{1}{2}$	14 7 $\frac{1}{2}$
14 5	14 6	14 6 $\frac{1}{2}$	360	14 8 $\frac{1}{2}$	14 9	14 9 $\frac{1}{2}$
14 7 $\frac{1}{2}$	14 8 $\frac{1}{2}$	14 9	365	14 10 $\frac{1}{2}$	14 11 $\frac{1}{2}$	15 0 $\frac{1}{2}$
14 9 $\frac{1}{2}$	14 10 $\frac{1}{2}$	14 11 $\frac{1}{2}$	370	15 1	15 1 $\frac{1}{2}$	15 2 $\frac{1}{2}$
15 0 $\frac{1}{2}$	15 1	15 1 $\frac{1}{2}$	375	15 3 $\frac{1}{2}$	15 4 $\frac{1}{2}$	15 4 $\frac{1}{2}$
15 2 $\frac{1}{2}$	15 3 $\frac{1}{2}$	15 4	380	15 5 $\frac{1}{2}$	15 6 $\frac{1}{2}$	15 7 $\frac{1}{2}$
15 4 $\frac{1}{2}$	15 5 $\frac{1}{2}$	15 6 $\frac{1}{2}$	385	15 8 $\frac{1}{2}$	15 9	15 9 $\frac{1}{2}$
15 7 $\frac{1}{2}$	15 8	15 8 $\frac{1}{2}$	390	15 10 $\frac{1}{2}$	15 11 $\frac{1}{2}$	16 0
15 9 $\frac{1}{2}$	15 10 $\frac{1}{2}$	15 10 $\frac{1}{2}$	395	16 1	16 1 $\frac{1}{2}$	16 2 $\frac{1}{2}$
16 0	16 0 $\frac{1}{2}$	16 1 $\frac{1}{2}$	400	16 3 $\frac{1}{2}$	16 4 $\frac{1}{2}$	16 4 $\frac{1}{2}$
16 2 $\frac{1}{2}$	16 3 $\frac{1}{2}$	16 3 $\frac{1}{2}$	405	16 5 $\frac{1}{2}$	16 6 $\frac{1}{2}$	16 7
16 4 $\frac{1}{2}$	16 5 $\frac{1}{2}$	16 5 $\frac{1}{2}$	410	16 8	16 9	16 9 $\frac{1}{2}$
16 7	16 7 $\frac{1}{2}$	16 8 $\frac{1}{2}$	415	16 10 $\frac{1}{2}$	16 11 $\frac{1}{2}$	16 11 $\frac{1}{2}$
16 9 $\frac{1}{2}$	16 10 $\frac{1}{2}$	16 10 $\frac{1}{2}$	420	17 1	17 1 $\frac{1}{2}$	17 2
16 11 $\frac{1}{2}$	17 0 $\frac{1}{2}$	17 0 $\frac{1}{2}$	425	17 3 $\frac{1}{2}$	17 4 $\frac{1}{2}$	17 4 $\frac{1}{2}$
17 2	17 3	17 3	430	17 5 $\frac{1}{2}$	17 6 $\frac{1}{2}$	17 6 $\frac{1}{2}$
17 4 $\frac{1}{2}$	17 5 $\frac{1}{2}$	17 5 $\frac{1}{2}$	435	17 8	17 9	17 9 $\frac{1}{2}$
17 6 $\frac{1}{2}$	17 7 $\frac{1}{2}$	17 7 $\frac{1}{2}$	440	17 10 $\frac{1}{2}$	17 11 $\frac{1}{2}$	17 11 $\frac{1}{2}$
17 9	17 10	17 10	445	18 0 $\frac{1}{2}$	18 1 $\frac{1}{2}$	18 2
17 11 $\frac{1}{2}$	18 0 $\frac{1}{2}$	18 0 $\frac{1}{2}$	450	18 3 $\frac{1}{2}$	18 4 $\frac{1}{2}$	18 4 $\frac{1}{2}$

Deduct 4d & lb. for freight from Canton, at 80 dollars & 10 cwt.

EXCHANGE at 4s 9d			Cost per Cwt. Paid in Dolls.	EXCHANGE at 4s 10d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per B. s. d.	per B. s. d.	per B. s. d.		per B. s. d.	per B. s. d.	per B. s. d.
8 10½	8 11	9 0½	210	9 0	9 0½	9 2½
9 0½	9 1½	9 3½	215	9 2½	9 3½	9 5½
9 3	9 4	9 5½	220	9 5	9 5½	9 7½
9 5½	9 6½	9 8	225	9 7½	9 8½	9 10
9 8	9 8½	9 10½	230	9 9½	9 10½	10 0½
9 10½	9 11½	10 0½	235	10 0½	10 1½	10 2½
10 0½	10 1½	10 3½	240	10 2½	10 3½	10 5½
10 3½	10 4	10 5½	245	10 5½	10 6½	10 7½
10 5½	10 6½	10 8	250	10 7½	10 8½	10 10½
10 8	10 9	10 10½	255	10 10½	10 11½	11 0½
10 10½	10 11½	11 0½	260	11 0½	11 1½	11 3
11 1	11 1½	11 3½	265	11 3½	11 4½	11 5½
11 3½	11 4½	11 5½	270	11 5½	11 6½	11 8
11 5½	11 6½	11 8	275	11 8½	11 9	11 10½
11 8½	11 9½	11 10½	280	11 10½	11 11½	12 1
11 10½	11 11½	12 0½	285	12 1½	12 2	12 3½
12 1½	12 2	12 3½	290	12 3½	12 4½	12 5½
12 3½	12 4½	12 5½	295	12 6	12 7	12 8½
12 6	12 7	12 8	300	12 8½	12 9½	12 10½
12 8½	12 9½	12 10½	305	12 11	12 9	13 1
12 11	12 11½	13 0½	310	13 1½	13 2½	13 3½
13 1½	13 2½	13 3½	315	13 4	13 5	13 6
13 3½	13 4½	13 5½	320	13 6½	13 7½	13 8½
13 5½	13 7	13 8	325	13 9	13 10	13 11
13 8½	13 9½	13 10½	330	13 11½	14 0½	14 1½
13 11	14 0	14 1	335	14 2	14 2½	14 3½
14 1½	14 2½	14 3½	340	14 4½	14 5½	14 6½
14 4	14 4½	14 5½	345	14 7	14 8½	14 8½
14 6½	14 7½	14 8	350	14 9½	14 10½	14 11½
14 8½	14 9½	14 10½	355	14 11½	15 0½	15 1½
14 11½	15 0½	15 1	360	15 2½	15 3½	15 4½
15 1½	15 2½	15 3½	365	15 4½	15 5½	15 6½
15 4½	15 5	15 5½	370	15 7½	15 8½	15 9
15 6½	15 7½	15 8	375	15 9½	15 10½	15 11½
15 9	15 10	15 10½	380	16 0½	16 1½	16 1½
15 11½	16 0½	16 1	385	16 2½	16 3½	16 4½
16 1½	16 2½	16 3½	390	16 5½	16 6	16 6½
16 4½	16 5½	16 5½	395	16 7½	16 8½	16 9½
16 6½	16 7½	16 8½	400	16 10½	16 11	16 11½
16 9½	16 10	16 10½	405	17 0½	17 1½	17 2
16 11½	17 0½	17 1	410	17 3½	17 4	17 4½
17 2	17 3	17 3½	415	17 5½	17 6½	17 7
17 4½	17 5½	17 5½	420	17 8	17 9	17 9½
17 7	17 7½	17 8½	425	17 10½	17 11½	17 11½
17 9½	17 10½	17 10½	430	18 1	18 2	18 2½
17 11½	18 0½	18 1	435	18 3½	18 4½	18 4½
18 2½	18 3½	18 3½	440	18 6	18 7	18 7½
18 4½	18 5½	18 5½	445	18 8½	18 9½	18 9½
18 7	18 8	18 8½	450	18 11	19 0	19 0

Deduct ½d. P. B. for freight from Canton, at 20 dollars P. 10 cwt.

EXCHANGE at 4s 11d			Cost per Hundred	EXCHANGE at 5s		
Freight £5 5p 50 feet.	Freight £7 10s. p 50 feet.	Overland Freight from Shanghai.		Freight £5 5p 50 feet.	Freight £7 10s. p 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.	Dolls.	per lb. s. d.	per lb. s. d.	per lb. s. d.
9 1½	9 2½	9 4½	210	9 3½	9 4½	9 6½
9 4½	9 5½	9 7	215	9 6½	9 7	9 9
9 6½	9 7½	9 9½	220	9 8½	9 9½	9 11½
9 9½	9 10½	10 0	225	9 11½	10 0½	10 2
9 11½	10 0½	10 2½	230	10 1½	10 2½	10 4½
10 2½	10 3½	10 5	235	10 4½	10 5½	10 7
10 5	10 5½	10 7½	240	10 7	10 7½	10 9½
10 7½	10 8½	10 10	245	10 9½	10 10½	11 0
10 10	10 10½	11 0½	250	11 0	11 1	11 2½
11 0½	11 1½	11 3	255	11 2½	11 3½	11 5½
11 3	11 4	11 5½	260	11 5½	11 6	11 7½
11 5½	11 6½	11 7½	265	11 7½	11 8½	11 10½
11 8	11 9	11 10½	270	11 10½	11 11½	12 0½
11 10½	11 11½	12 0½	275	12 1	12 1½	12 3½
12 1	12 2	12 3½	280	12 3½	12 4½	12 5½
12 3½	12 4½	12 5½	285	12 6	12 7	12 8½
12 6	12 7	12 8½	290	12 8½	12 9½	12 10½
12 8½	12 9½	12 10½	295	12 11½	13 0	13 1½
12 11½	13 0	13 1½	300	13 1½	13 2½	13 4
13 1½	13 2½	13 3½	305	13 4½	13 5½	13 6½
13 4½	13 5	13 6½	310	13 6½	13 7½	13 9
13 6½	13 7½	13 8½	315	13 9½	13 10½	13 11½
13 9½	13 10½	13 11½	320	14 0	14 1	14 2
13 11½	14 0½	14 1½	325	14 2½	14 3½	14 4½
14 2½	14 3½	14 4½	330	14 5	14 6	14 7½
14 4½	14 5½	14 6½	335	14 7½	14 8½	14 9½
14 7½	14 8½	14 9½	340	14 10½	14 11½	15 0½
14 9½	14 10½	14 11½	345	15 0½	15 1½	15 2½
15 0½	15 1½	15 2½	350	15 3½	15 4½	15 5½
15 3	15 3½	15 4½	355	15 6	15 6½	15 7½
15 5½	15 6½	15 7½	360	15 8½	15 9½	15 10½
15 8	15 8½	15 9½	365	15 11	16 0	16 0½
15 10½	15 11½	16 0½	370	16 1½	16 2½	16 3½
16 1	16 2	16 2½	375	16 4½	16 5	16 6
16 3½	16 4½	16 5½	380	16 6½	16 7½	16 8½
16 6	16 7	16 7½	385	16 9½	16 10½	16 11
16 8½	16 9½	16 10½	390	17 0	17 0½	17 1½
16 11	17 0	17 0½	395	17 2½	17 3½	17 4
17 1½	17 2½	17 3	400	17 5	17 6	17 6½
17 4½	17 5	17 5½	405	17 7½	17 8½	17 9
17 6½	17 7½	17 8	410	17 10½	17 11	17 11½
17 9½	17 10	17 10½	415	18 0½	18 1½	18 2½
17 11½	18 0½	18 1	420	18 3½	18 4½	18 4½
18 2½	18 3	18 3½	425	18 5½	18 6½	18 7½
18 4½	18 5½	18 6	430	18 8½	18 9½	18 9½
18 7½	18 8½	18 8½	435	18 11	19 0	19 0½
18 9½	18 10½	18 11	440	19 1½	19 2½	19 2½
19 0½	19 1½	19 1½	445	19 4	19 5	19 5½
19 2½	19 3½	19 4	450	19 6½	19 7½	19 8

Deduct ¼d per lb. for freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 5s 1d			Dolls.	EXCHANGE at 5s 2d		
Freight £5 P 50 feet.	Freight £7 1s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 1s. P 50 feet.	Overland Freight from Shanghai.
per B. s. d.	per B. s. d.	per B. s. d.		per B. s. d.	per B. s. d.	per B. s. d.
9 5½	9 6½	9 8½	210	9 7½	9 8	9 10
9 8	9 9	9 10½	215	9 9½	9 10½	10 0½
9 10½	9 11½	10 1½	220	10 0½	10 1½	10 3½
10 1½	10 2	10 4	225	10 3	10 4	10 6
10 3½	10 4½	10 6½	230	10 5½	10 6½	10 8½
10 6½	10 7½	10 9	235	10 8½	10 9½	10 11½
10 9	10 10	10 11½	240	10 11	11 0	11 1½
10 11½	11 0½	11 2½	245	11 1½	11 2½	11 4½
11 2½	11 3½	11 4½	250	11 4½	11 5½	11 7
11 4½	11 5½	11 7½	255	11 7	11 8	11 9½
11 7½	11 8½	11 10	260	11 9½	11 10½	12 0½
11 10	11 11	12 0½	265	12 0½	12 1½	12 3
12 0½	12 1½	12 3½	270	12 3	12 4	12 5½
12 3½	12 4½	12 5½	275	12 5½	12 6½	12 8
12 5½	12 6½	12 8½	280	12 8½	12 9½	12 10½
12 8½	12 9½	12 10½	285	12 11	12 11½	13 1½
12 11	13 0	13 1½	290	13 1½	13 2½	13 4
13 1½	13 2½	13 4	295	13 4½	13 5½	13 6½
13 4½	13 5½	13 6½	300	13 7	13 7½	13 9½
13 7	13 7½	13 9½	305	13 9½	13 10½	13 11½
13 9½	13 10½	13 11½	310	14 0½	14 1	14 2½
14 0½	14 1	14 2	315	14 2½	14 3½	14 5
14 2½	14 3½	14 4½	320	14 5½	14 6½	14 7½
14 5½	14 6½	14 7½	325	14 8½	14 9	14 10½
14 8	14 8½	14 10	330	14 10½	14 11½	15 1
14 10½	14 11½	15 0½	335	15 1½	15 2½	15 3½
15 1½	15 2	15 3½	340	15 4	15 5	15 6½
15 3½	15 4½	15 5½	345	15 6½	15 7½	15 8½
15 6½	15 7½	15 8½	350	15 9½	15 10½	15 11½
15 9	15 10	15 11	355	16 0	16 1	16 2
15 11½	16 0½	16 1½	360	16 2½	16 3½	16 4½
16 2½	16 3	16 4	365	16 5½	16 6½	16 7½
16 4½	16 5½	16 6½	370	16 8	16 9	16 9½
16 7½	16 8½	16 9½	375	16 10½	16 11½	17 0½
16 10	16 11	16 11½	380	17 1½	17 2½	17 3
17 0½	17 1½	17 2½	385	17 4	17 4½	17 5½
17 3½	17 4½	17 5	390	17 6½	17 7½	17 8½
17 5½	17 6½	17 7½	395	17 9½	17 10½	17 11
17 8½	17 9½	17 10	400	18 0	18 0½	18 1½
17 11	18 0	18 0½	405	18 2½	18 3½	18 4½
18 1½	18 2½	18 3½	410	18 5½	18 6	18 6½
18 4½	18 5½	18 6½	415	18 7½	18 8½	18 9½
18 7	18 7½	18 8½	420	18 10½	18 11½	19 0
18 9½	18 10½	18 11	425	19 1½	19 2	19 2½
19 0	19 1	19 1½	430	19 3½	19 4½	19 5½
19 2½	19 3½	19 4	435	19 6½	19 7½	19 7½
19 5½	19 6½	19 6½	440	19 9	19 10	19 10½
19 8	19 8½	19 9	445	19 11½	20 0½	20 1
19 10½	19 11½	19 11½	450	20 2	20 3½	20 3½

Deduct 1d per lb. for freight from Canton, at 80 dollars per 10 cwt.

EXCHANGE at 5s 3d			Foot Cost per Doll.	EXCHANGE at 5s 4d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.		per lb. s. d.	per lb. s. d.	per lb. s. d.
9 9	9 10	10 0	210	9 10½	9 11½	10 1½
9 11½	10 0½	10 2½	215	10 1½	10 2½	10 4½
10 2½	10 3½	10 5½	220	10 4½	10 5½	10 7½
10 5	10 6	10 8	225	10 7	10 8	10 10
10 7½	10 8½	10 10½	230	10 9½	10 10½	11 0½
10 10½	10 11½	11 1½	235	11 0½	11 1½	11 3½
11 1½	11 2	11 4	240	11 3½	11 4	11 6
11 3½	11 4½	11 6½	245	11 6	11 6½	11 8½
11 6½	11 7½	11 9½	250	11 8½	11 9½	11 11½
11 9½	11 10	12 0	255	11 11½	12 0½	12 2½
12 0	12 0½	12 2½	260	12 2½	12 3	12 4½
12 2½	12 3½	12 5½	265	12 4½	12 5½	12 7½
12 5½	12 6½	12 8	270	12 7½	12 8½	12 10½
12 8	12 9	12 10½	275	12 10½	12 11½	13 1
12 10½	12 11½	13 1½	280	13 1	13 2	13 3½
13 1½	13 2½	13 3½	285	13 3½	13 4½	13 6½
13 4	13 5	13 6½	290	13 6½	13 7½	13 9
13 6½	13 7½	13 9½	295	13 9½	13 10½	13 11½
13 9½	13 10½	13 11½	300	14 0	14 1	14 2½
14 0½	14 1	14 2½	305	14 2½	14 3½	14 5½
14 2½	14 3½	14 5½	310	14 5½	14 6½	14 8
14 5½	14 6½	14 7½	315	14 8½	14 9½	14 10½
14 8½	14 9½	14 10½	320	14 11	15 0	15 1
14 11	14 11½	15 1½	325	15 1½	15 2½	15 4
15 1½	15 2½	15 3½	330	15 4½	15 5½	15 6½
15 4½	15 5½	15 6½	335	15 7½	15 8	15 9
15 7	15 8	15 9	340	15 10	15 10½	16 0
15 9½	15 10½	15 11½	345	16 0½	16 1½	16 2½
16 0½	16 1½	16 2½	350	16 3½	16 4½	16 5½
16 3	16 4	16 5	355	16 6	16 7	16 8½
16 5½	16 6½	16 7½	360	16 8½	16 9½	16 11
16 8½	16 9½	16 10½	365	16 11½	17 0½	17 1½
16 11½	17 0	17 1	370	17 2½	17 3½	17 4½
17 1½	17 2½	17 3½	375	17 5	17 6	17 7
17 4½	17 5½	17 6½	380	17 7½	17 8½	17 9½
17 7½	17 8½	17 9	385	17 10½	17 11½	18 0½
17 10	17 10½	17 11½	390	18 1½	18 2½	18 3
18 0½	18 1½	18 2½	395	18 4	18 5	18 5½
18 3½	18 4½	18 5	400	18 6½	18 7½	18 8½
18 6	18 7	18 7½	405	18 9½	18 10½	18 11½
18 8½	18 9½	18 10½	410	19 0½	19 1	19 2
18 11½	19 0½	19 1	415	19 3	19 3½	19 4½
19 2	19 3	19 3½	420	19 5½	19 6½	19 7½
19 4½	19 5½	19 6½	425	19 8½	19 9½	19 10
19 7½	19 8½	19 9	430	19 11½	20 0	20 0½
19 10½	19 11	19 11½	435	20 2	20 2½	20 3½
20 0½	20 1½	20 2½	440	20 4½	20 5½	20 6
20 3½	20 4½	20 5	445	20 7½	20 8½	20 8½
20 6½	20 7½	20 7½	450	20 10	20 11	20 11½

Deduct ¼d per lb. for freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 5s 5d			Cent per Doll.	EXCHANGE at 5s 9d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.	Dolls.	per lb. s. d.	per lb. s. d.	per lb. s. d.
10 0½	10 1½	10 3½	210	10 2½	10 3½	10 5½
10 3½	10 4½	10 6½	215	10 5½	10 6	10 8½
10 6½	10 7	10 9½	220	10 8	10 9	10 11½
10 9	10 9½	11 0	225	10 10½	10 11½	11 2
10 11½	11 0½	11 2½	230	11 1½	11 2½	11 4½
11 2½	11 3½	11 5½	235	11 4½	11 5½	11 7½
11 5½	11 6½	11 8½	240	11 7½	11 8½	11 10½
11 8	11 9	11 11	245	11 10½	11 11	12 1
11 10½	11 11½	12 1½	250	12 1	12 1½	12 4
12 1½	12 2½	12 4½	255	12 3½	12 4½	12 6½
12 4½	12 5½	12 7½	260	12 6½	12 7½	12 9½
12 7½	12 8	12 10	265	12 9½	12 10½	13 0½
12 10	12 10½	13 0½	270	13 0½	13 1½	13 3
13 0½	13 1½	13 3½	275	13 3	13 4	13 5½
13 3½	13 4½	13 6½	280	13 6	13 6½	13 8½
13 6½	13 7½	13 9	285	13 8½	13 9½	13 11½
13 9	13 10	13 11½	290	13 11½	14 0½	14 2½
13 11½	14 0½	14 2½	295	14 2½	14 3½	14 5
14 2½	14 3½	14 5	300	14 5½	14 6	14 7½
14 5½	14 6½	14 7½	305	14 8	14 9	14 10½
14 8½	14 9	14 10½	310	14 10½	14 11½	15 1½
14 11	14 11½	15 1½	315	15 1½	15 2½	15 4
15 1½	15 2½	15 4	320	15 4½	15 5½	15 7
15 4½	15 5½	15 6½	325	15 7½	15 8½	15 9½
15 7½	15 8½	15 9½	330	15 10	15 11	16 0½
15 10	15 11	16 0½	335	16 1	16 1½	16 3½
16 0½	16 1½	16 3	340	16 3½	16 4½	16 6
16 3½	16 4½	16 5½	345	16 6½	16 7½	16 8½
16 6½	16 7½	16 8½	350	16 9½	16 10½	16 11½
16 9½	16 10	16 11½	355	17 0½	17 1	17 2½
17 0	17 0½	17 2	360	17 3	17 4	17 5½
17 2½	17 3½	17 4½	365	17 5½	17 6½	17 8
17 5½	17 6½	17 7½	370	17 8½	17 9½	17 10½
17 8½	17 9½	17 10½	375	17 11½	18 0½	18 1½
17 11	18 0	18 1	380	18 2½	18 3½	18 4½
18 1½	18 2½	18 3½	385	18 5½	18 6	18 7
18 4½	18 5½	18 6½	390	18 8	18 8½	18 10
18 7½	18 8½	18 9½	395	18 10½	18 11½	19 0½
18 10½	18 11	19 0	400	19 1½	19 2½	19 3½
19 1	19 1½	19 2½	405	19 4½	19 5½	19 6½
19 3½	19 4½	19 5½	410	19 7½	19 8½	19 9
19 6½	19 7½	19 8½	415	19 10	19 11	19 11½
19 9½	19 10½	19 11	420	20 1	20 1½	20 2½
20 0	20 1	20 1½	425	20 3½	20 4½	20 5½
20 2½	20 3½	20 4½	430	20 6½	20 7½	20 8½
20 5½	20 6½	20 7½	435	20 9½	20 10½	20 11
20 8½	20 9½	20 10	440	21 0½	21 1	21 1½
20 11½	21 0	21 0½	445	21 3	21 4	21 4½
21 2	21 2½	21 3½	450	21 5½	21 6½	21 7½

Deduct 1d per lb. for freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 5s 7d			Cost per pound.	EXCHANGE at 5s 8d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.		per lb. s. d.	per lb. s. d.	per lb. s. d.
10 4½	10 5	10 7½	210	10 6	10 7	10 9½
10 7	10 8	10 10½	215	10 9	10 9½	11 0½
10 10	10 10½	11 1½	220	10 11½	11 0½	11 3
11 0½	11 1½	11 4	225	11 2½	11 3½	11 6
11 3½	11 4½	11 6½	230	11 5½	11 6½	11 8½
11 6½	11 7½	11 9½	235	11 8½	11 9½	11 11½
11 9½	11 10½	12 0½	240	11 11½	12 0½	12 2½
12 0½	12 1½	12 3½	245	12 2½	12 3½	12 5½
12 3	12 4	12 6	250	12 5½	12 6½	12 8½
12 6	12 6½	12 9	255	12 8½	12 9	12 11½
12 8½	12 9½	12 11½	260	12 11	13 0	13 2½
12 11½	13 0½	13 2½	265	13 2	13 3	13 5
13 2½	13 3½	13 5½	270	13 4½	13 5½	13 7½
13 5½	13 6½	13 8½	275	13 7½	13 8½	13 10½
13 8½	13 9½	13 11	280	13 10½	13 11½	14 1½
13 11½	14 0	14 2	285	14 1½	14 2½	14 4½
14 2	14 3	14 4½	290	14 4½	14 5½	14 7½
14 5	14 5½	14 7½	295	14 7½	14 8½	14 10½
14 7½	14 8½	14 10½	300	14 10½	14 11½	15 1
14 10½	14 11½	15 1½	305	15 1½	15 2½	15 4
15 1½	15 2½	15 4	310	15 4½	15 5	15 6½
15 4½	15 5½	15 6½	315	15 7	15 8	15 9½
15 7½	15 8	15 9½	320	15 10	15 10½	16 0½
15 10	15 11	16 0½	325	16 0½	16 1½	16 3½
16 1	16 1½	16 3½	330	16 3½	16 4½	16 6½
16 3½	16 4½	16 6½	335	16 6½	16 7½	16 9
16 6½	16 7½	16 9	340	16 9½	16 10½	17 0
16 9½	16 10½	16 11½	345	17 0½	17 1½	17 2½
17 0½	17 1½	17 2½	350	17 3½	17 4½	17 5½
17 3½	17 4½	17 5½	355	17 6½	17 7½	17 8½
17 6	17 7	17 8½	360	17 9½	17 10	17 11½
17 9	17 10	17 11½	365	18 0	18 1	18 2½
17 11½	18 0½	18 2	370	18 3	18 4	18 5½
18 2½	18 3½	18 4½	375	18 6	18 6½	18 8
18 5½	18 6½	18 7½	380	18 8½	18 9½	18 11
18 8½	18 9½	18 10½	385	18 11½	19 0½	19 1½
18 11½	19 0½	19 1½	390	19 2½	19 3½	19 4½
19 2½	19 3	19 4	395	19 5½	19 6½	19 7½
19 5	19 6	19 7	400	19 8½	19 9½	19 10½
19 8	19 8½	19 9½	405	19 11½	20 0½	20 1½
19 10½	19 11½	20 0½	410	20 2½	20 3½	20 4½
20 1½	20 2½	20 3½	415	20 5½	20 6	20 7
20 4½	20 5½	20 6½	420	20 8	20 9	20 10
20 7½	20 8½	20 9	425	20 11	21 0	21 0½
20 10½	20 11	21 0	430	21 2	21 2½	21 3½
21 1	21 2	21 2½	435	21 4½	21 5½	21 6½
21 4	21 4½	21 5½	440	21 7½	21 8½	21 9½
21 6½	21 7½	21 8½	445	21 10½	21 11½	22 0½
21 9½	21 10½	21 11½	450	22 1½	22 2½	22 3

Deduct 3d per lb. for freight from Canton, at 80 dollars per 10 cwt.

EXCHANGE at 5s 9d			Cable Transfer Dolls.	EXCHANGE at 5s 10d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per B. s. d.	per B. s. d.	per B. s. d.		per B. s. d.	per B. s. d.	per B. s. d.
10 7½	10 8½	10 11½	210	10 9½	10 10½	11 1
10 10½	10 11½	11 2½	215	11 0½	11 1½	11 4
11 1½	11 2½	11 5	220	11 3½	11 4½	11 7
11 4½	11 5½	11 8	225	11 6½	11 7½	11 10
11 7½	11 8½	11 11	230	11 9½	11 10½	12 1
11 10½	11 11½	12 1½	235	12 0½	12 1½	12 4
12 1½	12 2½	12 4½	240	12 3½	12 4½	12 6½
12 4½	12 5½	12 7½	245	12 6½	12 7½	12 9½
12 7½	12 8½	12 10½	250	12 9½	12 10½	13 0½
12 10½	12 11½	13 1½	255	13 0½	13 1½	13 3½
13 1½	13 2½	13 4½	260	13 3½	13 4½	13 6½
13 4½	13 5½	13 7½	265	13 6½	13 7½	13 9½
13 7½	13 8½	13 10½	270	13 9½	13 10½	14 0½
13 10½	13 11	14 1	275	14 0½	14 1½	14 3½
14 1	14 2	14 4	280	14 3½	14 4½	14 6½
14 4	14 5	14 7	285	14 6½	14 7½	14 9½
14 7	14 8	14 9½	290	14 9½	14 10½	15 0½
14 10	14 10½	15 0½	295	15 0½	15 1½	15 3½
15 1	15 1½	15 3½	300	15 3½	15 4½	15 6½
15 3½	15 4½	15 6½	305	15 6½	15 7½	15 9½
15 6½	15 7½	15 9½	310	15 9½	15 10½	16 0
15 9½	15 10½	16 0½	315	16 0½	16 1½	16 3
16 0½	16 1½	16 3½	320	16 3½	16 4½	16 6
16 3½	16 4½	16 6½	325	16 6½	16 7½	16 9
16 6½	16 7½	16 9	330	16 9½	16 10½	17 0
16 9½	16 10½	17 0	335	17 0½	17 1½	17 2½
17 0½	17 1½	17 3	340	17 3½	17 4½	17 5½
17 3½	17 4½	17 5½	345	17 6½	17 7½	17 8½
17 6½	17 7½	17 8½	350	17 9½	17 10½	17 11½
17 9½	17 10½	17 11½	355	18 0½	18 1½	18 2½
18 0½	18 1½	18 2½	360	18 3½	18 4½	18 5½
18 3½	18 4½	18 5½	365	18 6½	18 7½	18 8½
18 6½	18 7	18 8½	370	18 9½	18 10½	18 11½
18 9½	18 10	18 11½	375	19 0½	19 1½	19 2½
19 0	19 1	19 2½	380	19 3½	19 4½	19 5½
19 3	19 4	19 5½	385	19 6½	19 7½	19 8½
19 6	19 7	19 8	390	19 9½	19 10½	19 11½
19 9	19 9½	19 11	395	20 0½	20 1½	20 2½
20 0	20 0½	20 2	400	20 3½	20 4½	20 5½
20 2½	20 3½	20 4½	405	20 6½	20 7½	20 8½
20 5½	20 6½	20 7½	410	20 9½	20 10½	20 11½
20 8½	20 9½	20 10½	415	21 0½	21 1½	21 2½
20 11½	21 0½	21 1½	420	21 3½	21 4½	21 5½
21 2½	21 3½	21 4½	425	21 6½	21 7½	21 8½
21 5½	21 6½	21 7½	430	21 9½	21 10½	21 11
21 8½	21 9½	21 10½	435	22 0½	22 1½	22 2
21 11½	22 0½	22 1½	440	22 3½	22 4½	22 5
22 2½	22 3½	22 4	445	22 6½	22 7½	22 8
22 5½	22 6½	22 7	450	22 9½	22 10½	22 11

Deduct ¼d per lb. for freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 5s 11d			Cent per Picul.	EXCHANGE at 6s 0d		
Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.		per lb. s. d.	per lb. s. d.	per lb. s. d.
10 11½	11 0½	11 3	Dolls.	11 1½	11 2	11 4½
11 2½	11 3½	11 6	210	11 4½	11 5½	11 8
11 5½	11 6½	11 9	215	11 7½	11 8½	11 11
11 8½	11 9½	12 0	220	11 10½	11 11½	12 2
11 11½	12 0½	12 3	225	12 1½	12 2½	12 5
12 2½	12 3½	12 6	230	12 4½	12 5½	12 8
12 5½	12 6½	12 9	235	12 7½	12 8½	12 11
12 8½	12 9½	13 0	240	12 10½	12 11½	13 2
12 11½	13 0½	13 3	245	13 1½	13 2½	13 5½
13 2½	13 3½	13 6	250	13 5	13 5½	13 8½
13 5½	13 6½	13 9	255	13 8	13 9	13 11½
13 8½	13 9½	14 0	260	13 11	14 0	14 2½
13 11½	14 0½	14 3	265	14 2½	14 3	14 5½
14 2½	14 3½	14 6	270	14 5½	14 6½	14 8½
14 5½	14 6½	14 9	275	14 8½	14 9½	14 11½
14 8½	14 9½	15 0	280	14 11½	15 0½	15 2½
14 11½	15 0½	15 3	285	15 2½	15 3½	15 5½
15 0	15 1	15 6	290	15 5½	15 6½	15 8½
15 3	15 4	15 9	295	15 8½	15 9½	15 11½
15 6	15 7	16 0	300	15 11½	16 0½	16 2½
15 9	16 0	16 3	305	16 2½	16 3½	16 5½
16 0	16 1	16 6	310	16 5½	16 6½	16 8½
16 3½	16 4	16 9	315	16 8½	16 9½	16 11½
16 6½	16 7	17 0	320	17 0	17 1	17 2½
16 9½	16 10	17 3	325	17 3	17 4	17 5½
17 0½	17 1½	17 6	330	17 6½	17 7	17 8½
17 3½	17 4½	17 9	335	17 9½	17 10½	17 11½
17 6½	17 7½	18 0	340	18 0½	18 1½	18 3
17 9½	17 10½	18 3	345	18 3½	18 4½	18 6
18 0½	18 1½	18 6	350	18 6½	18 7½	18 9
18 3½	18 4½	18 9	355	18 9½	18 10½	19 0
18 6½	18 7½	18 11½	360	19 0½	19 1½	19 3
18 9½	18 10½	19 2½	365	19 3½	19 4½	19 6
19 0½	19 1½	19 5½	370	19 6½	19 7½	19 9½
19 3½	19 4½	19 8½	375	19 9½	19 10½	20 0½
19 6½	19 7½	19 11½	380	20 1	20 1½	20 3½
19 9½	19 10½	20 2½	385	20 4	20 5	20 6½
20 0½	20 1½	20 5½	390	20 7	20 8	20 9½
20 3½	20 4½	20 8½	395	20 10½	20 11	21 0½
20 6½	20 7½	21 0	400	21 1½	21 2½	21 3½
20 9½	20 10½	21 2½	405	21 4½	21 5½	21 6½
21 0½	21 1½	21 5½	410	21 7½	21 8½	21 9½
21 3½	21 4½	21 8½	415	21 10½	21 11½	22 0½
21 6½	21 7½	21 11½	420	22 1½	22 2½	22 3½
21 9½	21 10½	22 2½	425	22 4½	22 5½	22 6½
22 1	22 1½	22 5½	430	22 7½	22 8½	22 9½
22 4	22 5	22 8½	435	22 10½	22 11½	23 0½
22 7	22 8	22 11½	440	23 1½	23 2½	23 3½
22 10	22 11	23 2½	445	23 5	23 5½	23 6½
23 1	23 2		450			

Deduct ¼d per lb. for freight from Canton, at 90 dollars per 10 cwt.

EXCHANGE at 6s 1d			Cost per Ton	EXCHANGE at 6s 2d		
Freight £4 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.		Freight £5 P 50 feet.	Freight £7 10s. P 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.	Dolla.	per lb. s. d.	per lb. s. d.	per lb. s. d.
11 3	11 4	11 6½	210	11 4½	11 5½	11 8½
11 6½	11 7	11 9½	215	11 8	11 8½	11 11½
11 9½	11 10½	12 1	220	11 11½	12 0	12 2½
12 0½	12 1½	12 4	225	12 2½	12 3½	12 6
12 3½	12 4½	12 7	230	12 5½	12 6½	12 9
12 6½	12 7½	12 10½	235	12 8½	12 9½	13 0½
12 9½	12 10½	13 1½	240	12 11½	13 0½	13 3½
13 0½	13 1½	13 4½	245	13 3	13 3½	13 6½
13 4	13 5	13 7½	250	13 6	13 7	13 9½
13 7	13 8	13 10½	255	13 9½	13 10½	14 0½
13 10½	13 11	14 1½	260	14 0½	14 1½	14 3½
14 1½	14 2½	14 4½	265	14 3½	14 4½	14 7
14 4½	14 5½	14 7½	270	14 6½	14 7½	14 10
14 7½	14 8½	14 10½	275	14 10	14 10½	15 1½
14 10½	14 11½	15 1½	280	15 1	15 2	15 4½
15 1½	15 2½	15 5	285	15 4½	15 5½	15 7½
15 5	15 5½	15 8	290	15 7½	15 8½	15 10½
15 8	15 9	15 11	295	15 10½	15 11½	16 1½
15 11½	16 0	16 2½	300	16 1½	16 2½	16 4½
16 2½	16 3½	16 5½	305	16 5	16 5½	16 8
16 5½	16 6½	16 8½	310	16 8	16 9	16 11
16 8½	16 9½	16 11½	315	16 11½	17 0½	17 2½
16 11½	17 0½	17 2½	320	17 2½	17 3½	17 5½
17 2½	17 3½	17 5½	325	17 5½	17 6½	17 8½
17 6	17 6½	17 8½	330	17 8½	17 9½	17 11½
17 9	17 10	17 11½	335	18 0	18 0½	18 2½
18 0½	18 1	18 2½	340	18 3	18 4	18 5½
18 3½	18 4½	18 6	345	18 6½	18 7½	18 9
18 6½	18 7½	18 9	350	18 9½	18 10½	19 0
18 9½	18 10½	19 0	355	19 0½	19 1½	19 3½
19 0½	19 1½	19 3½	360	19 3½	19 4½	19 6½
19 3½	19 4½	19 6½	365	19 7	19 7½	19 9½
19 6½	19 7½	19 9½	370	19 10	19 11	20 0½
19 10	19 11	20 0½	375	20 1½	20 2	20 3½
20 1	20 2	20 3½	380	20 4½	20 5½	20 6½
20 4½	20 5½	20 6½	385	20 7½	20 8½	20 10½
20 7½	20 8½	20 9½	390	20 10½	20 11½	21 1
20 10½	20 11½	21 0½	395	21 1½	21 2½	21 4½
21 1½	21 2½	21 3½	400	21 5	21 6	21 7½
21 4½	21 5½	21 7	405	21 8½	21 9	21 10½
21 7½	21 8½	21 10	410	21 11½	22 0½	22 1½
21 11	21 11½	22 1	415	22 2½	22 3½	22 4½
22 2	22 3	22 4½	420	22 5½	22 6½	22 7½
22 5½	22 6	22 7½	425	22 8½	22 9½	22 11
22 8½	22 9½	22 10½	430	23 0	23 1	23 2
22 11½	23 0½	23 1½	435	23 3½	23 4	23 5½
23 2	23 3½	23 4½	440	23 6½	23 7½	23 8½
23 5½	23 6½	23 7½	445	23 9½	23 10½	23 11½
23 8½	23 9½	23 10½	450	24 0½	24 1½	24 2½

Deduct 3d P lb. for freight from Canton, at 90 dollars P 10 cwt.

EXCHANGE at 6s 3d			Cost per poul.	EXCHANGE at 6s 4d		
Freight £5 p 50 feet.	Freight £7 10s. p 50 feet.	Overland Freight from Shanghai.		Freight £5 p 50 feet.	Freight. £7 10s. p 50 feet.	Overland Freight from Shanghai.
per lb. s. d.	per lb. s. d.	per lb. s. d.	Dolls.	per lb. s. d.	per lb. s. d.	per lb. s. d.
11 6½	11 7½	11 10½	210	11 8½	11 9½	12 0½
11 9½	11 10½	12 1½	215	11 11½	12 0½	12 3½
12 1	12 2	12 4½	220	12 3	12 3½	12 6½
12 4½	12 5½	12 8	225	12 6½	12 7	12 10
12 7½	12 8½	12 11½	230	12 9½	12 10½	13 1½
12 10½	12 11½	13 2½	235	13 0½	13 1½	13 4½
13 1½	13 2½	13 5½	240	13 4	13 4½	13 7½
13 5	13 6	13 8½	245	13 7½	13 8	13 10½
13 8½	13 9½	13 11½	250	13 10½	13 11½	14 2
13 11½	14 0½	14 3	255	14 1½	14 2½	14 5½
14 2½	14 3½	14 6½	260	14 5	14 5½	14 8½
14 6	14 6½	14 9½	265	14 8½	14 9	14 11½
14 9	14 10	15 0½	270	14 11½	15 0½	15 2½
15 0½	15 1½	15 3½	275	15 2½	15 3½	15 6½
15 3½	15 4½	15 6½	280	15 6	15 6½	15 9½
15 6½	15 7½	15 10	285	15 9½	15 10	16 0½
15 10	15 10½	16 1½	290	16 0½	16 1½	16 3½
16 1	16 2	16 4½	295	16 3½	16 4½	16 7
16 4½	16 5½	16 7½	300	16 7	16 7½	16 10
16 7½	16 8½	16 10½	305	16 10½	16 11	17 1½
16 10½	16 11½	17 1½	310	17 1½	17 2½	17 4½
17 2	17 2½	17 5	315	17 4½	17 5½	17 7½
17 5½	17 6	17 8	320	17 8	17 8½	17 11
17 8½	17 9½	17 11½	325	17 11½	18 0	18 2½
17 11½	18 0½	18 2½	330	18 2½	18 3½	18 5½
18 2½	18 3½	18 5½	335	18 5½	18 6½	18 8½
18 6	18 7	18 8½	340	18 9	18 9½	18 11½
18 9½	18 10	19 0	345	19 0½	19 1	19 3
19 0½	19 1½	19 3	350	19 3½	19 4½	19 6½
19 3½	19 4½	19 6½	355	19 6½	19 7½	19 9½
19 6½	19 7½	19 9½	360	19 10	19 10½	20 0½
19 10	19 11	20 0½	365	20 1½	20 2	20 3½
20 1½	20 2	20 3½	370	20 4½	20 5½	20 7
20 4½	20 5½	20 7	375	20 7½	20 8½	20 10½
20 7½	20 8½	20 10	380	20 11	20 11½	21 1½
20 10½	20 11½	21 1½	385	21 2½	21 3	21 4½
21 2	21 3	21 4½	390	21 5½	21 6½	21 7½
21 5½	21 6½	21 7½	395	21 8½	21 9½	21 11½
21 8½	21 9½	21 10½	400	22 0	22 0½	22 2½
21 11½	22 0½	22 2	405	22 3½	22 4	22 5½
22 2½	22 3½	22 5	410	22 6½	22 7½	22 8½
22 6	22 7	22 8½	415	22 9½	22 10½	22 11½
22 9½	22 10½	22 11½	420	23 1	23 1½	23 3
23 0½	23 1½	23 2½	425	23 4	23 5	23 6½
23 3½	23 4½	23 5½	430	23 7½	23 8½	23 9½
23 7	23 7½	23 9	435	23 10½	23 11½	24 0½
23 10	23 11	24 0	440	24 1½	24 2½	24 4
24 1½	24 2½	24 3½	445	24 5	24 6	24 7
24 4½	24 5½	24 6½	450	24 8½	24 9½	24 10½

Deduct 3d p lb. for freight from Canton, at 80 dollars per 10 cwt.

EXCHANGE at 6s 5d			per Doll. per Cent.	EXCHANGE at 6s 6d		
Freight £5 P 50 feet	Freight £7 10s P 50 feet	Overland Freight from Shanghai		Freight £5 P 50 feet	Freight £7 10s P 50 feet	Overland Freight from Shanghai
per lb. s. d.	per lb. s. d.	per lb. s. d.	Dolla.	per lb. s. d.	per lb. s. d.	per lb. s. d.
11 10½	11 11½	12 2½	210	12 0	12 1	12 4
12 1½	12 2½	12 5½	215	12 3½	12 4½	12 7½
12 4½	12 5½	12 8½	220	12 6½	12 7½	12 10½
12 8	12 9	13 0	225	12 10	12 11	13 2
12 11½	13 0½	13 3½	230	13 1½	13 2½	13 5½
13 2½	13 3½	13 6½	235	13 4½	13 5½	13 8½
13 6	13 7	13 9½	240	13 8	13 9	13 11½
13 9½	13 10½	14 1	245	13 11½	14 0½	14 3½
14 0½	14 1½	14 4½	250	14 2½	14 3½	14 6½
14 3½	14 4½	14 7½	255	14 6	14 7	14 9½
14 7½	14 8	14 10½	260	14 9½	14 10½	15 1
14 10½	14 11½	15 2	265	15 0½	15 1½	15 4½
15 1½	15 2½	15 5½	270	15 4	15 5	15 7½
15 5	15 6	15 8½	275	15 7½	15 8½	15 11
15 8½	15 9½	15 11½	280	15 10½	15 11½	16 2½
15 11½	16 0	16 3	285	16 2	16 3	16 5½
16 3	16 3½	16 6½	290	16 5½	16 6½	16 8½
16 6½	16 7	16 9½	295	16 8½	16 9½	17 0
16 9½	16 10½	17 0½	300	17 0	17 1	17 3½
17 0½	17 1½	17 4	305	17 3½	17 4½	17 6½
17 4	17 5	17 7½	310	17 6½	17 7½	17 10
17 7½	17 8½	17 10½	315	17 10	17 11	18 1½
17 10½	17 11½	18 1½	320	18 1½	18 2½	18 4½
18 2	18 2½	18 5	325	18 4½	18 5½	18 7½
18 5½	18 6½	18 8½	330	18 8	18 9	18 11
18 8½	18 9½	18 11½	335	18 11½	19 0½	19 2½
18 11½	19 0½	19 2½	340	19 2½	19 3½	19 5½
19 3	19 4	19 6	345	19 6	19 7	19 9
19 6½	19 7½	19 9½	350	19 9½	19 10½	20 0½
19 9½	19 10½	20 0½	355	20 0½	20 1½	20 3½
20 1	20 2	20 3½	360	20 4	20 5	20 6½
20 4½	20 5½	20 7	365	20 7½	20 8½	20 10½
20 7½	20 8½	20 10½	370	20 10½	20 11½	21 1½
20 10½	20 11½	21 1½	375	21 2	21 3	21 4½
21 2½	21 3	21 4½	380	21 5½	21 6½	21 8
21 5½	21 6½	21 8	385	21 8½	21 9½	21 11½
21 8½	21 9½	21 11½	390	22 0	22 1	22 2½
22 0	22 1	22 2½	395	22 3½	22 4½	22 6
22 3½	22 4½	22 5½	400	22 6½	22 7½	22 9½
22 6½	22 7½	22 9	405	22 10	22 11	23 0½
22 10	22 10½	23 0½	410	23 1½	23 2½	23 3½
23 1½	23 2	23 3½	415	23 4½	23 5½	23 7
23 4½	23 5½	23 6½	420	23 8	23 9	23 10½
23 7½	23 8½	23 10	425	23 11½	24 0½	24 1½
23 11	24 0	24 1½	430	24 2½	24 3½	24 5
24 2½	24 3½	24 4½	435	24 6	24 7	24 8½
24 5½	24 6½	24 7½	440	24 9½	24 10½	24 11½
24 9	24 9½	24 11	445	25 0½	25 1½	25 2½
25 0½	25 1½	25 2½	450	25 4	25 5	25 6

Deduct 4d & 10c. for freight from Canton, at 90 dollars & 10 cwt.

Table 2.—Showing the Cost of Tea, with all Charges.

Tea, as bought by the picul, and sold in London by the pound avoirdupois.

In these Tea Tables there are three charges included in the amount which is placed opposite the cost per picul, *viz.*—1, The cost of the tea in pence on the spot itself, at rates of exchange from 4s. 1d. to 6s. 8d. per dollar, and 4s. 6d. to 7s. 1d. per tael; 2, The charges of all kinds till it reaches England, reckoned at 13 per cent. as given in the explanation; 3, The constant quantity of $\frac{8}{10}$ of a penny per lb. for dock-management, rent, &c.

In sending tea to the United States, an addition of 8 or 10 cents per pound to the cost saves an adventure from loss when sold in New York. The cost per pound in cents, adding about 5 per cent., is the same as in taels and mace per picul. Thus 30 taels per picul is 31½ cents per pound.

EXPLANATION OF CHARGES.**INVOICE CHARGES.**

Inspecting brokerage,.....	$\frac{1}{4}$ per cent.
Commission (if on returns $2\frac{1}{4}$ per cent.) otherwise,.....	3 "
Insurance, from $2\frac{1}{4}$ to 3 per cent, according to season, say,.....	3 "
Other charges, too small to mention.	— $6\frac{1}{4}$ per cent.
Loss in weight, variable, say about,.....	$2\frac{1}{4}$ "

ACCOUNT SALE CHARGES.

Brokerage,.....	1 per cent.
Commission,.....	$2\frac{1}{4}$ "
Insurance from fire and other charges, say,.....	$\frac{1}{4}$ "
	— $3\frac{3}{4}$ per cent.

Dock-management rate, rent, &c., $\frac{1}{10}$ d. per lb. avoiz.	13 per cent. on cost.
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Example.

Find the cost of Tea per lb. avoiz, purchased in Canton at 40 taels per picul, at the exchange of 4s. 6d. per dollar, with freight £5 per ton.

40 taels, as per Table,.....	26.225
Freight,.....	1.500
	27.725—say cost 2s. $3\frac{3}{4}$ d. per lb.
But should the purchase exceed 40 taels per picul, say 45 taels, then it is easily ascertained thus :—	d.
40 taels, as per Table,	26.225
5 "	3.977
Freight at £5 per ton,.....	1.500
	31.702
Deduct for dock-management rate, &c., twice charged,	.800
	30.902—say cost 2s. 7d. per lb.

FREIGHT TO BE ADDED.

	d. dec.		d. dec.
At £2.10s. per ton of 50 cubic feet,...	0.750	At £4.10s. per ton of 50 cubic feet,...	1.350
" 3 " 50 " ...	0.900	" 5 " 50 " ...	1.500
" 3.10s. " 50 " ...	1.050	" 5.10s. " 50 " ...	1.650
" 4 " 50 " ...	1.200	" 6 " 50 " ...	1.800

EXCHANGE on LONDON at 4s 1d to 4s 8d per Dollar.

Price per Picul.	4/1	4/2	4/3	4/4	4/5	4/6	4/7	4/8
Cost,.....	.510	.521	.531	.542	.552	.562	.573	.583
13 Per cent	.066	.068	.069	.070	.072	.073	.075	.076
D. charg.	.809	.800	.800	.800	.800	.800	.800	.800
<i>Tons.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
1	1.376	1.369	1.400	1.412	1.424	1.435	1.448	1.459
2	1.952	1.977	2.000	2.024	2.047	2.071	2.095	2.118
3	2.529	2.566	2.601	2.636	2.671	2.706	2.741	2.777
4	3.106	3.154	3.201	3.249	3.295	3.342	3.389	3.436
5	3.682	3.742	3.801	3.860	3.918	3.977	4.036	4.095
6	4.258	4.331	4.401	4.472	4.543	4.613	4.683	4.755
7	4.835	4.920	5.002	5.085	5.167	5.249	5.331	5.414
8	5.411	5.508	5.602	5.696	5.791	5.885	5.979	6.073
9	5.988	6.096	6.202	6.309	6.415	6.520	6.626	6.732
10	6.567	6.685	6.803	6.921	7.039	7.156	7.274	7.391
11	7.144	7.273	7.401	7.532	7.662	7.791	7.921	8.050
12	7.722	7.861	8.003	8.145	8.286	8.427	8.569	8.710
13	8.297	8.450	8.603	8.756	8.910	9.063	9.216	9.369
14	8.875	9.039	9.203	9.369	9.535	9.699	9.863	10.028
15	9.451	9.627	9.805	9.981	10.157	10.334	10.511	10.687
16	10.027	10.216	10.405	10.593	10.781	10.970	11.159	11.346
17	10.605	10.804	11.005	11.205	11.405	11.605	11.806	12.006
18	11.181	11.392	11.606	11.817	12.029	12.240	12.454	12.665
19	11.758	11.981	12.206	12.430	12.654	12.876	13.101	13.324
20	12.335	12.570	12.807	13.041	13.277	13.513	13.747	13.983
21	12.912	13.160	13.406	13.653	13.901	14.148	14.395	14.642
22	13.489	13.747	14.006	14.265	14.524	14.784	15.042	15.301
23	14.066	14.336	14.607	14.877	15.148	15.419	15.690	15.960
24	14.642	14.925	15.207	15.490	15.772	16.055	16.336	16.620
25	15.218	15.512	15.807	16.101	16.396	16.690	16.984	17.279
26	15.796	16.102	16.407	16.713	17.020	17.326	17.631	17.938
27	16.372	16.691	17.008	17.326	17.644	17.962	18.279	18.597
28	16.948	17.279	17.608	17.937	18.267	18.598	18.926	19.256
29	17.526	17.867	18.208	18.520	18.891	19.233	19.574	19.916
30	18.102	18.455	18.803	19.162	19.515	19.868	20.221	20.575
31	18.679	19.045	19.409	19.775	20.139	20.504	20.869	21.234
32	19.256	19.632	20.009	20.386	20.762	21.140	21.516	21.893
33	19.833	20.221	20.609	20.998	21.386	21.775	22.164	22.552
34	20.409	20.810	21.209	21.610	22.011	22.411	22.811	23.211
35	20.986	21.398	21.809	22.222	22.634	23.047	23.459	23.870
36	21.563	21.987	22.410	22.835	23.259	23.683	24.105	24.530
37	22.140	22.576	23.010	23.446	23.882	24.318	24.753	25.189
38	22.716	23.164	23.610	24.057	24.505	24.955	25.400	25.848
39	23.293	23.752	24.210	24.671	25.131	25.589	26.048	26.507
40	23.871	24.341	24.812	25.283	25.754	26.225	26.693	27.166
50	29.639	30.226	30.815	31.403	31.992	32.582	33.170	33.758

Equal to cost per pound in England, minus freight.

EXCHANGE on LONDON at 4s 6d to 5s 4d per Dollar.

Price per Pound.	4/9	4/10	4/11	5/0	5/1	5/2	5/3	5/4
Cost,.....	.594	.604	.615	.625	.636	.646	.657	.667
13 p.cent	.077	.078	.080	.081	.082	.084	.085	.087
D. charg.	.800	.800	.800	.800	.800	.800	.800	.800
<i>Tons.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
1	1.471	1.482	1.495	1.506	1.517	1.530	1.542	1.554
2	2.142	2.165	2.189	2.212	2.234	2.260	2.284	2.308
3	2.812	2.848	2.884	2.919	2.951	2.990	3.026	3.062
4	3.484	3.530	3.577	3.625	3.668	3.720	3.768	3.816
5	4.155	4.214	4.272	4.331	4.388	4.450	4.510	4.570
6	4.825	4.896	4.966	5.037	5.102	5.180	5.252	5.324
7	5.496	5.579	5.661	5.744	5.819	5.910	5.994	6.078
8	6.167	6.261	6.355	6.450	6.536	6.640	6.736	6.832
9	6.830	6.944	7.050	7.156	7.253	7.370	7.478	7.586
10	7.509	7.627	7.744	7.862	7.970	8.100	8.220	8.340
11	8.180	8.310	8.439	8.569	8.687	8.830	8.962	9.094
12	8.850	8.992	9.133	9.275	9.404	9.560	9.704	9.848
13	9.521	9.675	9.823	9.981	10.121	10.290	10.446	10.602
14	10.193	10.358	10.521	10.687	10.838	11.020	11.188	11.356
15	10.864	11.041	11.217	11.394	11.555	11.750	11.930	12.110
16	11.534	11.724	11.911	12.100	12.272	12.460	12.672	12.864
17	12.212	12.406	12.606	12.806	12.989	13.210	13.414	13.618
18	12.876	13.089	13.300	13.512	13.706	13.940	14.156	14.372
19	13.546	13.771	13.995	14.219	14.423	14.670	14.898	15.126
20	14.219	14.454	14.689	14.925	15.140	15.400	15.640	15.880
21	14.886	15.136	15.384	15.631	15.857	16.130	16.382	16.634
22	15.560	15.819	16.077	16.337	16.574	16.860	17.124	17.388
23	16.231	16.501	16.772	17.044	17.291	17.590	17.866	18.142
24	16.902	17.184	17.466	17.750	18.008	18.320	18.608	18.896
25	17.573	17.867	18.161	18.456	18.725	19.050	19.350	19.650
26	18.244	18.550	18.856	19.162	19.442	19.780	20.092	20.404
27	19.915	19.232	19.550	19.869	20.159	20.510	20.834	21.158
28	19.586	19.915	20.245	20.575	20.876	21.240	21.576	21.912
29	20.256	20.598	20.939	21.281	21.593	21.970	22.318	22.666
30	20.928	21.281	21.634	21.987	22.310	22.700	23.060	23.420
31	21.599	21.964	22.329	22.694	23.027	23.430	23.802	24.174
32	22.270	22.646	23.023	23.404	23.744	24.160	24.544	24.928
33	22.940	23.328	23.717	24.106	24.461	24.890	25.286	25.682
34	23.611	24.011	24.411	24.812	25.178	25.620	26.028	26.436
35	24.282	24.694	25.106	25.519	25.895	26.350	26.770	27.190
36	24.953	25.377	25.800	26.225	26.612	27.080	27.512	27.944
37	25.624	26.060	26.495	26.931	27.329	27.810	28.254	28.698
38	26.295	26.742	27.190	27.637	28.046	28.540	28.996	29.452
39	26.966	27.425	27.884	28.344	28.763	29.270	29.738	30.062
40	27.637	28.103	28.579	29.050	29.480	30.000	30.480	30.966
50	34.346	34.926	35.524	36.112	36.650	37.300	37.300	38.500

EXCHANGE on LONDON at 5s 5d to 6s 0d per Dollar.								
Price per Picul.	5/5	5/6	5/7	5/8	5/9	5/10	5/11	6/0
Cost,.....	.678	.688	.699	.710	.720	.730	.741	.751
13 p cent.	.088	.089	.091	.092	.093	.095	.096	.098
D. charg.	.800	.800	.900	.800	.800	.800	.800	.800
<i>Tons.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
1	1.566	1.577	1.590	1.602	1.613	1.625	1.637	1.649
2	2.332	2.354	2.380	2.404	2.426	2.450	2.474	2.498
3	3.098	3.131	3.179	3.206	3.239	3.275	3.311	3.347
4	3.864	3.908	3.960	4.008	4.052	4.100	4.148	4.196
5	4.630	4.685	4.750	4.810	4.865	4.925	4.985	5.045
6	5.396	5.462	5.540	5.612	5.678	5.750	5.822	5.894
7	6.162	6.239	6.330	6.414	6.491	6.575	6.659	6.743
8	6.928	7.016	7.120	7.216	7.304	7.400	7.496	7.592
9	7.694	7.793	7.910	8.018	8.117	8.225	8.333	8.441
10	8.460	8.570	8.700	8.820	8.940	9.050	9.170	9.290
11	9.226	9.347	9.490	9.622	9.743	9.875	10.007	10.139
12	9.992	10.124	10.280	10.424	10.556	10.700	10.844	10.988
13	10.758	10.901	11.070	11.226	11.369	11.525	11.681	11.837
14	11.524	11.678	11.860	12.028	12.182	12.350	12.518	12.686
15	12.290	12.455	12.650	12.830	12.995	13.175	13.355	13.535
16	13.056	13.232	13.440	13.632	13.808	14.000	14.192	14.384
17	13.822	14.009	14.230	14.434	14.621	14.825	15.029	15.233
18	14.588	14.786	15.020	15.236	15.434	15.650	15.866	16.082
19	15.354	15.563	15.810	16.038	16.247	16.475	16.703	16.931
20	16.120	16.340	16.600	16.840	17.060	17.300	17.540	17.780
21	16.886	17.117	17.390	17.642	17.873	18.125	18.377	18.629
22	17.652	17.894	18.180	18.444	18.686	18.950	19.214	19.478
23	18.418	18.671	18.970	19.246	19.499	19.775	20.051	20.327
24	19.184	19.443	19.760	20.048	20.312	20.600	20.888	21.176
25	19.950	20.225	20.550	20.850	21.125	21.425	21.725	22.025
26	20.716	21.002	21.340	21.652	21.938	22.250	22.562	22.874
27	21.482	21.779	22.130	22.454	22.751	23.075	23.399	23.723
28	22.248	22.556	22.920	23.256	23.564	23.900	24.236	24.572
29	23.014	23.333	23.710	24.058	24.377	24.725	25.073	25.421
30	23.780	24.110	24.500	24.869	25.190	25.550	25.910	26.270
31	24.546	24.887	25.290	25.662	26.003	26.375	26.747	27.119
32	25.312	25.664	26.080	26.464	26.816	27.200	27.584	27.968
33	26.078	26.441	26.870	27.266	27.629	28.025	28.421	28.817
34	26.844	27.218	27.660	28.068	28.442	28.850	29.258	29.666
35	27.610	27.995	28.450	28.870	29.255	29.675	30.095	30.515
36	28.376	28.772	29.240	29.672	30.069	30.500	30.932	31.364
37	29.142	29.549	30.030	30.474	30.881	31.325	31.769	32.213
38	29.908	30.326	30.820	31.276	31.694	32.150	32.606	33.062
39	30.674	31.103	31.610	32.078	32.507	32.975	33.443	33.911
40	31.440	31.880	32.400	32.880	33.320	33.800	34.280	34.760
50	39.100	39.650	40.300	40.900	41.450	42.050	42.650	43.250

Equal to cost per pound in England, minus freight.

EXCHANGE on LONDON at 6s 1d to 6s 8d per Dollar.

Price per Picul.	6/1	6/2	6/3	6/4	6/5	6/6	6/7	6/8
Cost, .....	.762	.773	.785	.794	.805	.815	.825	.836
13 percent	.099	.100	.102	.103	.104	.106	.107	.108
D. charg.	.800	.800	.800	.800	.800	.800	.800	.800
<i>Tues.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
1	1.661	1.673	1.685	1.697	1.709	1.721	1.732	1.744
2	2.522	2.546	2.570	2.594	2.618	2.642	2.664	2.688
3	3.383	3.419	3.455	3.491	3.527	3.563	3.596	3.632
4	4.244	4.292	4.340	4.388	4.436	4.484	4.528	4.576
5	5.105	5.165	5.225	5.285	5.345	5.405	5.460	5.520
6	5.966	6.038	6.110	6.182	6.254	6.326	6.392	6.464
7	6.827	6.911	6.995	7.079	7.163	7.247	7.324	7.408
8	7.688	7.784	7.880	7.976	8.072	8.168	8.256	8.352
9	8.549	8.658	8.765	8.873	8.981	9.089	9.188	9.296
10	9.410	9.539	9.650	9.770	9.890	10.010	10.120	10.240
11	10.271	10.403	10.535	10.667	10.799	10.931	11.052	11.184
12	11.132	11.276	11.420	11.564	11.708	11.852	11.984	12.128
13	11.993	12.149	12.305	12.461	12.617	12.773	12.916	13.072
14	12.854	13.022	13.190	13.358	13.526	13.694	13.848	14.016
15	13.715	13.895	14.075	14.255	14.435	14.615	14.780	14.960
16	14.576	14.768	14.960	15.152	15.344	15.536	15.712	15.904
17	15.437	15.641	15.815	16.049	16.253	16.457	16.644	16.848
18	16.298	16.514	16.730	16.946	17.162	17.378	17.576	17.892
19	17.159	17.387	17.615	17.843	18.071	18.299	18.508	18.736
20	18.020	18.260	18.500	18.740	18.980	19.220	19.440	19.680
21	18.881	19.133	19.385	19.637	19.889	20.141	20.372	20.624
22	19.742	20.006	20.276	20.534	20.798	21.062	21.304	21.568
23	20.603	20.879	21.155	21.431	21.707	21.983	22.236	22.512
24	21.464	21.752	22.040	22.328	22.616	22.904	23.168	23.456
25	22.325	22.625	22.925	23.225	23.525	23.825	24.109	24.400
26	23.186	23.498	23.810	24.122	24.434	24.746	25.032	25.344
27	24.047	24.371	24.695	25.019	25.343	25.667	25.964	26.288
28	24.908	25.244	25.580	25.916	26.252	26.588	26.896	27.232
29	25.769	26.117	26.465	26.813	27.161	27.509	27.828	28.176
30	26.630	26.990	27.350	27.710	28.070	28.430	28.760	29.120
31	27.421	27.863	28.235	28.607	28.979	29.351	29.692	30.064
32	28.352	28.736	29.120	29.504	29.888	30.272	30.624	31.008
33	29.213	29.609	30.005	30.401	30.797	31.193	31.556	31.952
34	30.074	30.482	30.890	31.298	31.706	32.114	32.488	32.896
35	30.935	31.355	31.775	32.195	32.615	33.035	33.420	33.840
36	31.796	32.228	32.660	33.092	33.524	33.956	34.352	34.784
37	32.657	33.101	33.545	33.986	34.433	34.875	35.284	35.718
38	33.518	33.974	34.430	34.786	35.342	35.798	36.216	36.672
39	34.379	34.847	35.315	35.688	36.251	36.719	37.148	37.616
40	35.240	35.720	36.200	36.680	37.160	37.640	38.080	38.560
50	43.850	44.450	45.050	45.650	46.250	46.850	47.400	48.000

Equal to cost per pound in England, minus freight.

EXCHANGE on LONDON at 4s 6d to 5s 2d per Tael.								
Price per Pieul.	4/6	4/7	4/8	4/9	4/10	4/11	5/0	5/1
Cost,.....	.405	.413	.420	.428	.435	.443	.450	.458
13 1/2 cent	.053	.054	.055	.056	.057	.058	.059	.060
D. charg.	.800	.800	.800	.800	.800	.800	.800	.800
Tails.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.
1	1.258	1.267	1.275	1.284	1.292	1.301	1.309	1.318
2	1.716	1.734	1.750	1.768	1.784	1.802	1.818	1.836
3	2.174	2.201	2.225	2.252	2.276	2.303	2.327	2.354
4	2.632	2.668	2.700	2.736	2.768	2.804	2.836	2.872
5	3.090	3.135	3.175	3.220	3.260	3.305	3.345	3.390
6	3.548	3.602	3.650	3.704	3.752	3.806	3.854	3.908
7	4.006	4.069	4.125	4.188	4.244	4.307	4.363	4.426
8	4.464	4.536	4.600	4.672	4.736	4.808	4.872	4.944
9	4.922	5.003	5.075	5.156	5.228	5.309	5.381	5.462
10	5.380	5.470	5.550	5.640	5.720	5.810	5.890	5.980
11	5.838	5.937	6.025	6.124	6.212	6.311	6.399	6.498
12	6.296	6.404	6.500	6.608	6.704	6.812	6.908	7.016
13	6.754	6.871	6.975	7.092	7.196	7.313	7.417	7.534
14	7.212	7.338	7.450	7.576	7.688	7.814	7.926	8.052
15	7.670	7.805	7.925	8.060	8.180	8.315	8.435	8.570
16	8.128	8.272	8.400	8.544	8.672	8.816	8.944	9.088
17	8.586	8.739	8.875	9.028	9.164	9.317	9.453	9.606
18	9.044	9.206	9.350	9.512	9.656	9.818	9.962	10.124
19	9.502	9.763	9.825	9.996	10.148	10.319	10.471	10.642
20	9.960	10.140	10.300	10.480	10.640	10.820	10.980	11.160
21	10.418	10.607	10.775	10.964	11.132	11.321	11.489	11.678
22	10.876	11.074	11.250	11.448	11.624	11.822	11.998	12.196
23	11.334	11.541	11.725	11.932	12.116	12.323	12.507	12.714
24	11.792	12.008	12.200	12.416	12.608	12.824	13.016	13.232
25	12.250	12.475	12.675	12.900	13.100	13.325	13.525	13.750
26	12.708	12.942	13.150	13.384	13.592	13.826	14.034	14.268
27	13.166	13.409	13.625	13.868	14.084	14.327	14.543	14.786
28	13.624	13.876	14.100	14.352	14.576	14.828	15.052	15.304
29	14.082	14.343	14.575	14.836	15.068	15.329	15.561	15.822
30	14.540	14.810	15.050	15.320	15.560	15.830	16.070	16.340
31	14.998	15.277	15.525	15.804	16.052	16.331	16.579	16.858
32	15.456	15.744	16.000	16.288	16.544	16.832	17.088	17.376
33	15.914	16.211	16.475	16.772	17.036	17.333	17.597	17.894
34	16.372	16.678	16.950	17.256	17.528	17.834	18.106	18.412
35	16.830	17.145	17.425	17.740	18.020	18.335	18.615	18.930
36	17.288	17.612	17.900	18.224	18.512	18.836	19.124	19.448
37	17.746	18.079	18.375	18.708	19.004	19.337	19.633	19.966
38	18.204	18.546	18.850	19.192	19.496	19.838	20.142	20.484
39	18.662	19.013	19.325	19.676	19.988	20.339	20.631	21.002
40	19.120	19.480	19.800	20.160	20.480	20.849	21.160	21.520
50	28.700	24.150	24.550	25.000	25.400	25.850	26.250	26.700

EXCHANGE on LONDON at 5s 2d to 5s 9d per Tael.								
Price per Pical.	5/2	5/3	5/4	5/5	5/6	5/7	5/8	5/9
Cost,.....	.465	.473	.480	.488	.495	.503	.510	.518
13 pcent	.060	.061	.062	.063	.064	.065	.066	.067
D. charg.	.800	.800	.800	.800	.800	.800	.800	.800
Tael.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.
1	1.325	1.334	1.342	1.351	1.359	1.368	1.376	1.385
2	1.850	1.868	1.884	1.902	1.918	1.936	1.952	1.970
3	2.375	2.402	2.426	2.453	2.477	2.504	2.528	2.555
4	2.900	2.936	2.968	3.004	3.036	3.072	3.104	3.140
5	3.425	3.470	3.510	3.555	3.595	3.640	3.680	3.725
6	3.950	4.004	4.052	4.106	4.154	4.208	4.256	4.310
7	4.475	4.538	4.594	4.657	4.713	4.776	4.832	4.895
8	5.000	5.072	5.136	5.208	5.272	5.344	5.408	5.480
9	5.525	5.606	5.678	5.769	5.831	5.912	5.984	6.065
10	6.050	6.140	6.220	6.310	6.390	6.480	6.560	6.650
11	6.575	6.674	6.762	6.861	6.949	7.048	7.136	7.235
12	7.100	7.208	7.304	7.412	7.508	7.616	7.712	7.820
13	7.625	7.742	7.846	7.963	8.067	8.184	8.288	8.405
14	8.150	8.276	8.388	8.514	8.626	8.752	8.864	8.990
15	8.675	8.810	8.930	9.065	9.185	9.320	9.440	9.575
16	9.200	9.344	9.473	9.616	9.744	9.888	10.016	10.160
17	9.725	9.878	10.014	10.167	10.303	10.456	10.592	10.745
18	10.250	10.412	10.556	10.718	10.862	11.024	11.168	11.330
19	10.775	10.946	11.098	11.269	11.421	11.592	11.744	11.915
20	11.300	11.480	11.640	11.820	11.980	12.160	12.320	12.500
21	11.825	12.014	12.182	12.371	12.539	12.728	12.896	13.085
22	12.350	12.548	12.724	12.922	13.098	13.296	13.472	13.670
23	12.875	13.082	13.266	13.473	13.657	13.864	14.048	14.255
24	13.400	13.616	13.808	14.024	14.216	14.432	14.624	14.840
25	13.925	14.150	14.350	14.575	14.775	15.000	15.200	15.425
26	14.450	14.684	14.892	15.126	15.334	15.568	15.776	16.010
27	14.975	15.218	15.434	15.677	15.893	16.136	16.352	16.595
28	15.500	15.752	15.976	16.228	16.452	16.704	16.928	17.180
29	16.025	16.286	16.518	16.779	17.011	17.272	17.504	17.765
30	16.550	16.820	17.060	17.330	17.570	17.840	18.080	18.350
31	17.075	17.354	17.602	17.881	18.129	18.408	18.656	18.935
32	17.600	17.888	18.144	18.432	18.688	18.976	19.232	19.520
33	18.125	18.422	18.686	18.983	19.247	19.544	19.808	20.105
34	18.650	18.956	19.228	19.534	19.806	20.112	20.384	20.690
35	19.175	19.490	19.770	20.085	20.365	20.680	20.960	21.275
36	19.700	20.024	20.312	20.636	20.924	21.248	21.536	21.860
37	20.225	20.558	20.854	21.187	21.483	21.816	22.112	22.445
38	20.750	21.092	21.396	21.738	22.042	22.384	22.688	23.030
39	21.275	21.626	21.938	22.289	22.601	22.952	23.264	23.615
40	21.800	22.160	22.480	22.840	23.160	23.520	23.840	24.200
50	27.050	27.500	27.900	28.350	28.750	29.200	29.600	30.050

EXCHANGE on LONDON at 5s 10d to 6s 5d per Tael.								
Price per Pisul.	5/10	5/11	6/0	6/1	6/2	6/3	6/4	6/5
Cost.....	.525	.533	.540	.548	.555	.563	.570	.578
13 1/2 cent	.068	.069	.070	.071	.072	.073	.074	.075
D. charg.	.800	.800	.800	.800	.800	.800	.800	.800
Tael.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.	d. dec.
1	1.393	1.402	1.410	1.419	1.427	1.436	1.444	1.453
2	1.986	2.004	2.020	2.038	2.054	2.072	2.088	2.106
3	2.579	2.606	2.630	2.657	2.681	2.708	2.732	2.759
4	3.172	3.208	3.240	3.276	3.308	3.344	3.376	3.412
5	3.765	3.810	3.850	3.895	3.935	3.980	4.020	4.065
6	4.358	4.412	4.460	4.514	4.562	4.616	4.664	4.718
7	4.951	5.014	5.070	5.133	5.189	5.252	5.308	5.371
8	5.544	5.616	5.680	5.752	5.816	5.888	5.952	6.024
9	6.137	6.218	6.290	6.371	6.448	6.524	6.596	6.677
10	6.730	6.820	6.900	6.990	7.070	7.160	7.240	7.330
11	7.323	7.422	7.510	7.609	7.697	7.796	7.884	7.983
12	7.916	8.024	8.120	8.228	8.324	8.432	8.528	8.636
13	8.509	8.626	8.730	8.847	8.951	9.068	9.172	9.289
14	9.102	9.228	9.340	9.466	9.578	9.704	9.816	9.942
15	9.695	9.830	9.950	10.085	10.205	10.340	10.460	10.595
16	10.288	10.432	10.560	10.704	10.832	10.976	11.104	11.248
17	10.881	11.034	11.170	11.323	11.459	11.612	11.748	11.901
18	11.474	11.636	11.780	11.942	12.086	12.248	12.392	12.554
19	12.067	12.238	12.390	12.561	12.713	12.884	13.036	13.207
20	12.660	12.840	13.000	13.180	13.340	13.520	13.680	13.860
21	13.253	13.442	13.610	13.799	13.967	14.156	14.324	14.513
22	13.846	14.044	14.220	14.418	14.594	14.792	14.968	15.166
23	14.439	14.646	14.830	15.037	15.221	15.428	15.612	15.819
24	15.032	15.248	15.440	15.656	15.848	16.064	16.256	16.472
25	15.625	15.850	16.050	16.275	16.475	16.700	16.900	17.125
26	16.218	16.452	16.660	16.894	17.102	17.336	17.544	17.778
27	16.811	17.054	17.270	17.513	17.729	17.972	18.188	18.431
28	17.404	17.656	17.880	18.132	18.356	18.608	18.832	19.084
29	17.997	18.258	18.490	18.751	18.983	19.244	19.476	19.737
30	18.590	18.860	19.100	19.370	19.610	19.880	20.120	20.390
31	19.183	19.462	19.710	19.989	20.237	20.516	20.764	21.043
32	19.776	20.064	20.320	20.608	20.864	21.152	21.408	21.696
33	20.369	20.666	20.930	21.227	21.491	21.788	22.052	22.349
34	20.962	21.268	21.540	21.846	22.118	22.424	22.696	23.002
35	21.555	21.870	22.150	22.465	22.745	23.060	23.340	23.655
36	22.148	22.472	22.760	23.084	23.372	23.696	23.984	24.308
37	22.741	23.074	23.370	23.703	23.999	24.332	24.628	24.961
38	23.334	23.676	23.980	24.322	24.626	24.968	25.272	25.614
39	23.927	24.278	24.590	24.941	25.253	25.604	25.916	26.267
40	24.520	24.880	25.200	25.560	25.880	26.240	26.560	26.920
50	30.450	30.900	31.300	31.750	32.150	32.600	33.000	33.450

Equal to cost per pound in England, minus freight.

EXCHANGE on LONDON at 6s 8d to 7s 1d per Tael.

Price per Picul.	6/6	6/7	6/8	6/9	6/10	6/11	7/0	7/1
Cost,....	.585	.593	.600	.608	.615	.623	.630	.638
13 1/2 cent	.076	.077	.078	.079	.080	.081	.082	.083
D. charg.	.800	.800	.800	.800	.800	.800	.800	.800
<i>Tails.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>	<i>d. dec.</i>
1	1.461	1.470	1.478	1.487	1.495	1.504	1.512	1.521
2	2.122	2.140	2.156	2.174	2.190	2.208	2.224	2.242
3	2.783	2.810	2.834	2.861	2.885	2.912	2.936	2.963
4	3.444	3.480	3.512	3.548	3.580	3.616	3.648	3.684
5	4.105	4.150	4.190	4.235	4.275	4.320	4.360	4.405
6	4.766	4.820	4.868	4.922	4.970	5.024	5.072	5.126
7	5.427	5.490	5.546	5.609	5.665	5.728	5.784	5.847
8	6.088	6.160	6.224	6.296	6.360	6.432	6.498	6.568
9	6.749	6.830	6.902	6.983	7.055	7.136	7.208	7.289
10	7.410	7.500	7.590	7.670	7.750	7.840	7.920	8.010
11	8.071	8.170	8.258	8.357	8.445	8.544	8.632	8.731
12	8.732	8.840	8.936	9.044	9.140	9.248	9.344	9.452
13	9.393	9.510	9.614	9.731	9.835	9.952	10.056	10.173
14	10.054	10.180	10.292	10.418	10.530	10.656	10.768	10.894
15	10.715	10.850	10.970	11.105	11.225	11.360	11.480	11.615
16	11.376	11.520	11.649	11.792	11.920	12.064	12.192	12.336
17	12.037	12.190	12.326	12.479	12.615	12.768	12.904	13.057
18	12.698	12.860	13.004	13.166	13.310	13.472	13.616	13.778
19	13.359	13.536	13.682	13.845	14.005	14.176	14.328	14.499
20	14.020	14.200	14.360	14.540	14.700	14.880	15.040	15.220
21	14.681	14.870	15.038	15.227	15.395	15.584	15.752	15.941
22	15.342	15.540	15.716	15.914	16.090	16.288	16.464	16.662
23	16.003	16.210	16.394	16.601	16.785	16.992	17.176	17.383
24	16.664	16.880	17.072	17.288	17.480	17.696	17.898	18.104
25	17.325	17.550	17.750	17.975	18.175	18.400	18.600	18.825
26	17.986	18.220	18.428	18.662	18.870	19.104	19.312	19.546
27	18.647	18.890	19.106	19.349	19.565	19.808	20.024	20.267
28	19.308	19.560	19.784	20.036	20.260	20.512	20.736	20.988
29	19.969	20.230	20.462	20.723	20.955	21.216	21.448	21.709
30	20.630	20.900	21.140	21.410	21.650	21.920	22.160	22.430
31	21.291	21.570	21.818	22.097	22.345	22.624	22.872	23.151
32	21.952	22.240	22.496	22.784	23.040	23.328	23.584	23.872
33	22.613	22.910	23.174	23.471	23.735	24.032	24.296	24.593
34	23.274	23.580	23.852	24.158	24.430	24.736	25.008	25.314
35	23.935	24.250	24.530	24.845	25.125	25.440	25.720	26.035
36	24.596	24.920	25.208	25.532	25.820	26.144	26.432	26.756
37	25.257	25.590	25.886	26.219	26.515	26.848	27.144	27.477
38	25.918	26.260	26.564	26.906	27.210	27.552	27.856	28.198
39	26.579	26.930	27.242	27.593	27.905	28.266	28.568	28.919
40	27.240	27.600	27.920	28.280	28.600	28.960	29.280	29.640
50	33.850	34.300	34.700	35.150	35.550	36.000	36.400	36.850

Equal to cost per pound in England, minus freight.

Table 3.—Showing the Approximate Cost of Tea, minus Freight, laid down in New-York.

Bought in China by the Picul for Taels of Sycee or Dollars, and sold in New-York by the Pound Avoirdupois for U.S. Currency.

EXPLANATIONS.

CHARGES as follows :—

ON INVOICE.

PERCENTAGE CHARGE—Commission,.....	2	per cent.
Fire insurance,.....	$\frac{1}{2}$	"
Marine insurance, $3\frac{1}{2}$ per cent, say.....	$3\frac{1}{2}$	"

6 per cent.

PACKAGE CHARGE—(Half-chests estimated at 60 lb weight.)

Rattans, matting and marking..	20	cents.
Labor and storage in godown,.....	6	"
Boat and coolie hire, shipping and wharfage,.....	5	"

each package,..... 31 cents.

or say 70 cents per picul.

ON ACCOUNT SALES.

PERCENTAGE CHARGE—Commission and guarantee,.....	5	per cent.
Brokerage,.....	1	"
Fire insurance, and interest on charges, say $\frac{1}{2}$	$\frac{1}{2}$	"
Discount, 6 months' interest at 7 per cent..	3 $\frac{1}{2}$	
per annum,.....		

10 per cent.

PACKAGE CHARGE—Cartage, labor, storage, weighing, cooperage } per package
and advertising,..... } average 10 cents.
or say cent 0.140000 per lb.

IN ACCOUNT CURRENT.

CHINA—Commission, negotiating bill,.....	included in the rate of exchange.	1	per cent.
Brokerage,.....		$\frac{1}{2}$	"
Shroffage,.....		50	cents per mil.
LONDON—Banker's commission,.....		2	per cent.

Additional charge for Freight from \$1 to \$35 per Ton of 40 cubic feet.

Rate of Frt.	Charge on a lb. of tea	Rate of Frt.	Charge on a lb. of tea	Rate of Frt.	Charge on a lb. of tea	Rate of Frt.	Charge on a lb. of tea	Rate of Frt.	Charge on a lb. of tea
\$	cent. dec.	\$	cent. dec.	\$	cent. dec.	\$	cent. dec.	\$	cent. dec.
1	0.1333	8	1.0666	15	1.9999	22	2.9333	29	3.8666
2	0.2666	9	1.1999	16	2.1333	23	3.0666	30	3.9999
3	0.3999	10	1.3333	17	2.2666	24	3.1999	31	4.1333
4	0.5333	11	1.4666	18	2.3999	25	3.3333	32	4.2666
5	0.6666	12	1.5999	19	2.5333	26	3.4666	33	4.3999
6	0.7999	13	1.7333	20	2.6666	27	3.5999	34	4.5333
7	0.9333	14	1.8666	21	2.7999	28	3.7333	35	4.6666

This freight table is calculated at the rate of 750 lbs. of tea per measurement ton; but there is some difference in the number of pounds per ton in different kinds of tea; for instance, Congou, at 9 full chests of 90 lbs., averages 810 lbs. per ton; at 16 half-chests of 42 lbs. each, averages 672 lbs. per ton; Oolong, at 16 half-chests of 36 lbs. each, averages 576 lbs. per ton; and green teas, at 13 half-chests of 65 lbs. each, averages 845 lbs. per ton. The out-turn of a picul is about 132 lbs. average.

BASIS OF CALCULATION.

Find cost of Tea φ lb avoirdupois, purchased in China at 20 Taels or Dollars φ picul.
Exchange at $4/2$, Freight at \$10.

1 picul of Tea costing 20 Taels or Dollars φ picul,.....	20.00
Invoice, percentage, charge, 6 φ cent.,.....	1.20
package "	0.70

with charges, Taels or Dollars 21.9.0 φ picul in China.

1 picul of Tea with charges at 20 Taels or Dollars cost }	21.90
as above,.....	
Deduct $\frac{1}{2}$ to reduce to lb, ..	5.475

cents 16.425 φ lb. in China.

Add Exchange at $4/2$, equal to about 5 φ cent. premium, }	.82125
between China and New York,	

Add account sales, percentage charge, 10 φ cent.,.....	17.24625
package "	1.724625
	.140000

1 lb costs,	19.110875
freight at \$10,.....	1.333330

cents 20.44205 φ lb in New York.

This Table is calculated as follows:—

Cost of 1 picul at 1 Tael or Dollar,.....	1.00
Deduct $\frac{1}{2}$ to reduce to lb, .....	.25

Add Exchange, $4/2$ or 5 φ cent., .....	.75
	3750

„ Account sales, percentage charge, 10 φ cent., .....	.78750
	78750

„ Invoice percentage charge, 6 φ cent.,.....	.866250
	51975

.918225

Invoice package charge, 1 picul,.....	70 cents.
Deduct $\frac{1}{2}$,	175

	525
Add Exchange, 5 φ cent.,.....	2625

	55125
„ 10 φ cent.,.....	55125

	606375
New-York package charge, .	140000

746375

at 1 Tael,.....	1.864600
2 Taels add,	918225

at 2 Taels,.....cents 2.582825

Say at 20 Taels, multiply.....	918225
by	20=18.364500
Add package charges,	746375

without freight, cents 19.110875 φ lb in New-York.

		RATE of EXCHANGE on LONDON, OR ITS APPROXIMATE EQUIVALENT ON NEW-YORK.							
Price per Picul in China.		4/3	4/4	4/5	4/6	4/7	4/8	4/9	4/10
		or 7 per Cent Prem.	or 9 per C. Prem.	or 11 per C. Prem.	or 14 per C. Prem.	or 16 per C. Prem.	or 18 per C. Prem.	or 20 per C. Prem.	or 22 per C. Prem.
Cost, .....		.882	.899	.915	.940	.957	.973	.990	1.006
6 p cent. ....		.052	.053	.054	.056	.057	.058	.059	.060
China pg. charge		.617	.629	.641	.658	.669	.681	.693	.704
N.-York pkg. chg.		1.40	.140	.140	.140	.140	.140	.140	.140
<i>Tael or \$</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>	<i>at dec.</i>
6	6.372	6.488	6.605	6.779	6.896	7.012	7.129	7.245	
7	7.307	7.441	7.575	7.776	7.910	8.044	8.178	8.312	
8	8.243	8.395	8.546	8.773	8.925	9.076	9.228	9.379	
9	9.179	9.348	9.517	9.770	9.939	10.108	10.277	10.446	
10	10.115	10.301	10.487	10.767	10.954	11.130	11.327	11.513	
11	11.050	11.254	11.458	11.764	11.968	12.172	12.376	12.580	
12	11.986	12.207	12.429	12.761	12.982	13.204	13.425	13.647	
13	12.922	13.161	13.400	13.758	13.997	14.236	14.475	14.714	
14	13.857	14.114	14.370	14.755	15.011	15.268	15.524	15.781	
15	14.793	15.067	15.341	15.752	16.026	16.300	16.574	16.847	
16	15.729	16.020	16.312	16.749	17.040	17.332	17.623	17.914	
17	16.665	16.973	17.282	17.746	18.055	18.363	18.672	18.981	
18	17.600	17.927	18.253	18.743	19.069	19.395	19.722	20.048	
19	18.536	18.880	19.224	19.740	20.083	20.427	20.771	21.115	
20	19.472	19.833	20.194	20.736	21.098	21.459	21.821	22.182	
21	20.407	20.786	21.165	21.733	22.112	22.491	22.870	23.249	
22	21.343	21.739	22.136	22.730	23.127	23.523	23.919	24.316	
23	22.279	22.693	23.107	23.727	24.141	24.555	24.969	25.383	
24	23.215	23.646	24.077	24.724	25.155	25.587	26.018	26.449	
25	24.150	24.599	25.048	25.721	26.170	26.619	27.068	27.516	
26	25.086	25.552	26.019	26.718	27.184	27.651	28.117	28.583	
27	26.022	26.506	26.989	27.715	28.199	28.683	29.166	29.650	
28	26.957	27.459	27.960	28.712	29.213	29.714	30.216	30.717	
29	27.893	28.412	28.931	29.709	30.228	30.746	31.265	31.784	
30	28.829	29.365	29.901	30.706	31.242	31.778	32.315	32.851	
31	29.765	30.318	30.872	31.703	32.256	32.810	33.364	33.918	
32	30.700	31.272	31.843	32.700	33.271	33.842	34.413	34.985	
33	31.636	32.225	32.813	33.697	34.285	34.874	35.463	36.051	
34	32.572	33.178	33.784	34.693	35.300	35.906	36.512	37.118	
35	33.507	34.131	34.755	35.690	36.314	36.938	37.562	38.185	
36	34.443	35.084	35.726	36.687	37.329	37.970	38.611	39.252	
37	35.379	36.038	36.696	37.684	38.343	39.002	39.660	40.319	
38	36.315	36.991	37.667	38.681	39.357	40.034	40.710	41.386	
39	37.250	37.944	38.638	39.678	40.372	41.065	41.759	42.453	
40	38.186	38.897	39.608	40.675	41.386	42.097	42.809	43.520	
41	39.122	39.850	40.579	41.672	42.401	43.129	43.858	44.587	
42	40.057	40.804	41.550	42.669	43.415	44.161	44.907	45.653	
43	40.993	41.757	42.520	43.666	44.429	45.193	45.957	46.720	
44	41.929	42.710	43.491	44.663	45.444	46.225	47.006	47.787	
45	42.865	43.663	44.462	45.660	46.458	47.257	48.056	48.854	
46	43.800	44.616	45.432	46.657	47.473	48.289	49.105	49.921	
47	44.736	45.570	46.403	47.654	48.487	49.321	50.154	50.988	
48	45.672	46.523	47.374	48.650	49.502	50.353	51.204	52.055	
49	46.607	47.476	48.345	49.647	50.516	51.385	52.253	53.123	
50	47.543	48.429	49.315	50.644	51.530	52.416	53.303	54.189	

Equal to cost per pound in New-York, minus freight.

RATE of EXCHANGE on LONDON, OR ITS APPROXIMATE EQUIVALENT ON NEW-YORK.								
Price per Picul in China.	4/11 or 24 per Cent Prem.	5/0 or 26 per C. Prem.	5/1 or 28 per C. Prem.	5/2 or 30 per C. Prem.	5/3 or 32 per C. Prem.	5/4 or 35 per C. Prem.	5/5 or 37 per C. Prem.	5/6 or 39 per C. Prem.
Cost,.....	..... 1.023	1.039	1.056	1.072	1.089	1.113	1.130	1.146
6 ½ cent. ....	..... .061	.062	.063	.064	.065	.066	.067	.068
China pg. charge	.716	.727	.739	.750	.762	.779	.791	.802
N.-York pkg.chg.	.140	.140	.140	.140	.140	.140	.140	.140
<i>Tael</i> or <i>g</i>	<i>ct. dec.</i>	<i>ct. dec.</i>	<i>ct. dec.</i>	<i>ct. dec.</i>	<i>ct. dec.</i>	<i>ct. dec.</i>	<i>ct. dec.</i>	<i>ct. dec.</i>
6	7.362	7.478	7.595	7.711	7.828	8.003	8.119	8.236
7	8.446	8.580	8.714	8.848	8.982	9.183	9.317	9.451
8	9.531	9.682	9.834	9.985	10.137	10.364	10.515	10.667
9	10.615	10.784	10.953	11.122	11.291	11.544	11.713	11.882
10	11.699	11.886	12.072	12.259	12.445	12.725	12.911	13.098
11	12.784	12.988	13.192	13.396	13.600	13.905	14.109	14.313
12	13.868	14.090	14.311	14.532	14.754	15.086	15.307	15.529
13	14.953	15.191	15.430	15.669	15.908	16.267	16.506	16.744
14	16.037	16.293	16.550	16.806	17.063	17.447	17.704	17.960
15	17.121	17.395	17.669	17.943	18.217	18.628	18.902	19.176
16	18.206	18.497	18.783	19.080	19.371	19.808	20.100	20.391
17	19.290	19.599	19.908	20.217	20.526	20.989	21.298	21.607
18	20.374	20.701	21.027	21.354	21.680	22.169	22.496	22.822
19	21.459	21.803	22.147	22.490	22.834	23.350	23.694	24.038
20	22.543	22.905	23.266	23.627	23.989	24.531	24.892	25.253
21	23.628	24.006	24.385	24.764	25.143	25.711	26.090	26.469
22	24.712	25.108	25.505	25.901	26.297	26.892	27.288	27.684
23	25.796	26.210	26.624	27.038	27.452	28.072	28.486	28.900
24	26.881	27.312	27.743	28.175	28.606	29.253	29.684	30.116
25	27.965	28.414	28.863	29.312	29.760	30.434	30.882	31.331
26	29.049	29.516	29.982	30.448	30.915	31.614	32.080	32.547
27	30.134	30.618	31.101	31.585	32.069	32.795	33.278	33.762
28	31.218	31.720	32.221	32.722	33.223	33.975	34.476	34.978
29	32.303	32.821	33.340	33.859	34.378	35.156	35.675	36.193
30	33.387	33.923	34.460	34.996	35.532	36.336	36.873	37.409
31	34.471	35.025	35.579	36.133	36.686	37.517	38.071	38.624
32	35.556	36.127	36.698	37.269	37.841	38.698	39.269	39.840
33	36.640	37.229	37.818	38.406	38.995	39.878	40.467	41.056
34	37.725	38.331	38.937	39.543	40.149	41.059	41.665	42.271
35	38.809	39.433	40.056	40.680	41.304	42.239	42.863	43.487
36	39.893	40.534	41.176	41.817	42.458	43.420	44.061	44.702
37	40.978	41.636	42.295	42.954	43.612	44.600	45.259	45.918
38	42.062	42.738	43.414	44.091	44.767	45.781	46.457	47.133
39	43.146	43.840	44.534	45.227	45.921	46.962	47.655	48.349
40	44.231	44.942	45.653	46.364	47.075	48.142	48.853	49.564
41	45.315	46.044	46.772	47.501	48.230	49.323	50.051	50.780
42	46.400	47.146	47.892	48.638	49.384	50.503	51.249	51.996
43	47.484	48.248	49.011	49.775	50.538	51.684	52.447	53.211
44	48.568	49.349	50.131	50.912	51.693	52.864	53.646	54.427
45	49.653	50.451	51.250	52.049	52.847	54.045	54.844	55.642
46	50.737	51.553	52.369	53.185	54.001	55.226	56.042	56.858
47	51.821	52.655	53.489	54.322	55.156	56.406	57.240	58.073
48	52.906	53.757	54.608	55.459	56.310	57.587	58.438	59.289
49	53.990	54.859	55.727	56.596	57.464	58.767	59.636	60.504
50	55.075	55.961	56.847	57.733	58.619	59.948	60.834	61.720

		RATE of EXCHANGE on LONDON, OR ITS APPROXIMATE EQUIVALENT ON NEW-YORK.							
Price per Picul in China.		5/7	5/8	5/9	5/10	5/11	6/0	6/1	6/2
		or 41 per Cent Prem.	or 43 per C. Prem.	or 45 per C. Prem.	or 47 per C. Prem.	or 49 per C. Prem.	or 51 per C. Prem.	or 53 per C. Prem.	or 55 per C. Prem.
Cost,.....	1.163	1.179	1.196	1.212	1.229	1.245	1.262	1.287	
6 p cent.....	.069	.070	.071	.072	.073	.074	.075	.077	
China pg. charge, .814		.825	.837	.848	.860	.872	.883	.900	
N.-York pkg. chg. 140		.140	.140	.140	.140	.140	.140	.140	
Tons or \$	at dec.	at dec.	at dec.	at dec.	at dec.	at dec.	at dec.	at dec.	
6	8.352	8.469	8.585	8.702	8.818	8.934	9.051	9.226	
7	9.585	9.719	9.853	9.987	10.121	10.255	10.389	10.590	
8	10.818	10.970	11.121	11.273	11.424	11.575	11.727	11.954	
9	12.051	12.220	12.389	12.558	12.727	12.896	13.065	13.318	
10	13.284	13.471	13.657	13.844	14.030	14.216	14.403	14.683	
11	14.517	14.721	14.925	15.129	15.333	15.537	15.741	16.047	
12	15.750	15.972	16.193	16.415	16.636	16.857	17.079	17.411	
13	16.983	17.222	17.461	17.700	17.939	18.178	18.417	18.775	
14	18.216	18.473	18.729	18.976	19.242	19.498	19.755	20.139	
15	19.449	19.723	19.997	20.271	20.545	20.819	21.093	21.504	
16	20.682	20.974	21.265	21.557	21.848	22.139	22.431	22.866	
17	21.916	22.224	22.533	22.842	23.151	23.460	23.769	24.232	
18	23.149	23.475	23.801	24.128	24.454	24.780	25.107	25.596	
19	24.382	24.725	25.069	25.413	25.757	26.101	26.445	26.961	
20	25.615	25.976	26.337	26.699	27.060	27.421	27.783	28.325	
21	26.848	27.227	27.605	27.984	28.363	28.742	29.121	29.689	
22	28.081	28.477	28.873	29.270	29.666	30.062	30.459	31.053	
23	29.314	29.728	30.141	30.555	30.969	31.383	31.797	32.417	
24	30.547	30.978	31.409	31.841	32.272	32.703	33.135	33.782	
25	31.780	32.229	32.678	33.126	33.575	34.024	34.473	35.146	
26	33.013	33.479	33.946	34.412	34.878	35.344	35.811	36.510	
27	34.246	34.730	35.214	35.697	36.181	36.665	37.149	37.874	
28	35.479	35.980	36.482	37.983	37.484	37.985	38.487	39.239	
29	36.712	37.231	37.750	38.269	38.787	39.306	39.825	40.603	
30	37.945	38.481	39.018	39.554	40.090	40.626	41.163	41.967	
31	39.178	39.732	40.286	40.839	41.393	41.947	42.501	43.331	
32	40.411	40.982	41.554	42.125	42.696	43.267	43.839	44.695	
33	41.644	42.233	42.822	43.410	43.999	44.588	45.177	46.060	
34	42.877	43.484	44.090	44.696	45.302	45.908	46.515	47.424	
35	44.110	44.734	45.358	45.981	46.605	47.229	47.853	48.788	
36	45.343	45.985	46.626	47.267	47.908	48.549	49.191	50.152	
37	46.576	47.235	47.894	48.552	49.211	49.870	50.529	51.617	
38	47.809	48.486	49.162	49.838	50.514	51.190	51.867	52.881	
39	49.043	49.736	50.430	51.124	51.817	52.511	53.204	54.245	
40	50.276	50.987	51.698	52.409	53.120	53.831	54.542	55.609	
41	51.509	52.237	52.966	53.695	54.423	55.152	55.880	56.973	
42	52.742	53.488	54.234	54.980	55.726	56.472	57.218	58.338	
43	53.975	54.738	55.502	56.266	57.029	57.793	58.556	59.702	
44	55.208	55.989	56.770	57.551	58.332	59.113	59.894	61.066	
45	56.441	57.239	58.038	58.837	59.635	60.434	61.232	62.430	
46	57.674	58.490	59.306	60.122	60.938	61.754	62.570	63.795	
47	58.907	59.740	60.574	61.408	62.241	63.075	63.908	65.159	
48	60.140	60.991	61.842	62.693	63.544	64.395	65.246	66.523	
49	61.373	62.242	63.110	63.979	64.847	65.716	66.584	67.887	
50	62.606	63.492	64.378	65.264	66.150	67.036	67.922	69.251	

Equal to cost per pound in New-York, minus freight.

		RATE of EXCHANGE on LONDON, OR ITS APPROXIMATE EQUIVALENT ON NEW YORK.							
Price per Picul in China.		6/3 or 58 per Cent Prem.	6/4 or 60 per C. Prem.	6/5 or 62 per C. Prem.	6/6 or 64 per C. Prem.	6/7 or 66 per C. Prem.	6/8 or 68 per C. Prem.	6/9 or 70 per C. Prem.	6/10 or 72 per C. Prem.
Cost ...	.....	1.503	1.320	1.336	1.353	1.369	1.386	1.402	1.419
6 1/2 cent	.....	.078	.079	.080	.081	.082	.083	.084	.085
China pg. charge	.912	.924	.935	.947	.958	.970	.981	.993	
N.-York	pkg. cl. p. 140	.140	.140	.140	.140	.140	.140	.140	.140
Tons or 5	ct dec.	ct dec.	ct dec.	ct dec.	ct dec.	ct dec.	ct dec.	ct dec.	ct dec.
6	9.342	9.459	9.575	9.692	9.808	9.925	10.041	10.158	
7	10.724	10.868	10.992	11.126	11.260	11.394	11.528	11.662	
8	12.106	12.257	12.409	12.560	12.712	12.863	13.014	13.166	
9	13.487	13.656	13.825	13.994	14.163	14.332	14.501	14.670	
10	14.869	15.056	15.242	15.428	15.615	15.801	15.988	16.174	
11	16.251	16.455	16.659	16.863	17.067	17.270	17.474	17.678	
12	17.632	17.854	18.075	18.297	18.518	18.740	18.961	19.182	
13	19.014	19.253	19.492	19.731	19.970	20.209	20.448	20.687	
14	20.396	20.652	20.909	21.165	21.422	21.679	21.934	22.191	
15	21.778	22.052	22.325	22.599	22.873	23.146	23.421	23.695	
16	23.169	23.451	23.742	24.033	24.325	24.617	24.908	25.199	
17	24.541	24.850	25.159	25.467	25.777	26.086	26.394	26.703	
18	25.923	26.249	26.575	26.902	27.228	27.555	27.881	28.207	
19	27.304	27.648	27.992	28.336	28.680	29.024	29.368	29.711	
20	28.686	29.048	29.409	29.770	30.132	30.493	30.854	31.216	
21	30.068	30.447	30.828	31.204	31.583	31.962	32.341	32.720	
22	31.450	31.846	32.242	32.639	33.035	33.431	33.828	34.224	
23	32.831	33.245	33.659	34.073	34.487	34.900	35.314	35.728	
24	34.213	34.644	35.076	35.507	35.938	36.370	36.801	37.232	
25	35.595	36.044	36.492	36.941	37.390	37.839	38.288	38.736	
26	36.976	37.443	37.909	38.375	38.842	39.308	39.774	40.240	
27	38.358	38.842	39.326	39.809	40.293	40.777	41.261	41.745	
28	39.740	40.241	40.742	41.244	41.745	42.246	42.747	43.249	
29	41.122	41.640	42.169	42.678	43.197	43.715	44.234	44.753	
30	42.503	43.040	43.576	44.112	44.646	45.185	45.721	46.257	
31	43.885	44.439	44.992	45.546	46.100	46.654	47.207	47.761	
32	45.267	45.838	46.409	46.980	47.552	48.123	48.694	49.265	
33	46.648	47.237	47.826	48.415	49.003	49.592	50.181	50.769	
34	48.030	48.636	49.243	49.849	50.455	51.061	51.667	52.274	
35	49.412	50.036	50.659	51.283	51.907	52.530	53.154	53.778	
36	50.794	51.435	52.076	52.717	53.358	53.999	54.641	55.282	
37	52.175	52.834	53.493	54.151	54.810	55.469	56.127	56.786	
38	53.557	54.233	54.909	55.585	56.262	56.938	57.614	58.290	
39	54.939	55.632	56.326	57.020	57.713	58.407	59.101	59.794	
40	56.320	57.032	57.743	58.454	59.165	59.876	60.587	61.294	
41	57.702	58.431	59.159	59.888	60.617	61.345	62.074	62.803	
42	59.084	59.830	60.576	61.322	62.068	62.814	63.561	64.307	
43	60.465	61.229	61.993	62.756	63.520	64.284	65.047	65.811	
44	61.847	62.628	63.409	64.191	64.972	65.753	66.534	67.315	
45	63.229	64.028	64.826	65.625	66.423	67.222	68.021	68.819	
46	64.611	65.427	66.243	67.059	67.875	68.691	69.507	70.323	
47	65.992	66.826	67.659	68.493	69.327	70.160	70.994	71.827	
48	67.374	68.225	69.076	69.927	70.778	71.629	72.480	73.332	
49	68.756	69.624	70.493	71.361	72.230	73.099	73.967	74.836	
50	70.137	71.024	71.910	72.796	73.682	74.568	75.454	76.340	

The *Exchange Table* is calculated as follows:—

To produce Taels or \$100,000 in China must be sold,	101,188.97
Less Commission, 1 p cent.,	1,011.89
„ Brokerage, ½ p cent.,	126.49
„ Shroffage, 50 cents p mil.,	50.59
	<u>1,188.97</u>

Taels or \$100,000.00

Taels or \$101,188.97 at 4/2, ... £21,081.00.9

London commission, 2 ½ p cent.,

421.12.5

£21,502.13.2 at 4/6 per rate, 95,567.37

Bills to cover bought in New-York, 10 p cent. premium, 9,556.74

Taels or \$105,124.11

say 5 p cent. premium.

The foregoing tables are extracted from the fuller tables of Mr. P. Loureiro of Shanghai, by his permission, and include only the common prices and rates of exchange. Teas sent to the United States are measured in China, and the measurement inserted in the bill of lading with the freight. The logarithmic table for measuring cargo is given in another place.

Table 4.—Comparison of the Price of Tea per Picul with the Rate per Pound in Pence.

Taels per picul.	At 4s. per Dollar.	At 4s. 7d. per Dollar.	At 4s. 8d. per Dollar.	At 4s. 9d. per Dollar.	At 4s. 10d. per Dollar.	At 4s. 11d. per Dollar.	At 5s. per Dollar.
	P. p lb.	Pen. per lb.	Pen. per lb.	Pen. per lb.	Pen. per lb.	Pen. per lb.	Pen. per lb.
20 equal	10	11.458	11.666	11.875	12.083	12.291	12.500
21 „	10½	12.031	12.250	12.478	12.687	12.906	13.125
22 „	11	12.604	12.833	13.072	13.291	13.520	13.750
23 „	11½	13.177	13.416	13.666	13.895	14.135	14.375
24 „	12	13.749	14.000	14.250	14.499	14.749	15.000
25 „	12½	14.322	14.583	14.843	15.104	15.364	15.625
26 „	13	14.895	15.166	15.437	15.708	15.979	16.250
27 „	13½	15.468	15.750	16.031	16.312	16.593	16.875
28 „	14	16.041	16.333	16.625	16.916	17.208	17.500
29 „	14½	16.614	16.916	17.218	17.520	17.822	18.125
30 „	15	17.187	17.500	17.812	18.125	18.437	18.750
31 „	15½	17.760	18.083	18.406	18.729	19.052	19.375
32 „	16	18.333	18.666	19.000	19.333	19.666	20.000
33 „	16½	18.906	19.250	19.593	19.937	20.281	20.625
34 „	17	19.479	19.833	20.187	20.541	20.895	21.250
35 „	17½	20.052	20.416	20.781	21.145	21.510	21.875
36 „	18	20.624	21.000	21.375	21.750	22.124	22.500
37 „	18½	21.197	21.583	21.968	22.354	22.739	23.125
38 „	19	21.770	22.166	22.562	22.958	23.354	23.750
39 „	19½	22.343	22.750	23.156	23.562	23.968	24.375
40 „	20	22.916	23.333	23.750	24.166	24.583	25.000

To convert dollars per picul into shillings per pound at 4s. per dollar.—Multiply by 3, and divide by 100.

To convert dollars per picul into shillings per cwt., at the same exchange.—Multiply by 3, 100.

To convert shillings per pound into dollars per picul, at 4s. per dollar.—Multiply by 100, and divide by 3.

To convert shillings per cwt. into dollars per picul, at the same exchange.—Multiply by 29½, and divide by 100; the result will be nearly correct.

Table 6.—Comparison of Canton and Bombay Prices of Cotton.

A Bombay patent bale weighs 3 cwt.; $2\frac{1}{2}$ bales are consequently equal to a candy of 7 cwt. A Calcutta bale of cotton weighs $2\frac{1}{2}$ piculs, and 5 bales make a ton of 50 feet measurement.

At Calcutta, cotton is sold at sicca rupees per bazar maund. In lieu of a table of comparative prices, the following rule will suffice:—

To convert sicca rupees per bazar maund into taels per picul at the exchange of 205 sicca rupees per \$100.—Multiply the sicca rupees by the decimals .57, and the result will be very nearly correct. Thus, 12 sicca rupees per bazar maund, multiplied by .57, gives 6.84 taels per picul.

To convert taels per picul into sicca rupees per bazar maund, at the same exchange.—Add $\frac{1}{3}$ to the number of taels. Thus, T. 6.84 per picul, add $\frac{1}{3}$ ths, or T. 6.13 = Sicca Rs. 11.87 per bazar maund.

Canton price per picul.		Bombay Price per Candy.		Canton price per picul.		Bombay Price per Candy.	
		at 216 per \$100				at 200 per \$100	
Taels.	maas.	Rupees.	Rupees.	Taels.	maas.	Rupees.	Rupees.
5	0	88.20	81.666	9	0	158.76	147.000
6	0	105.84	98.000	9	5	167.58	155.166
6	5	114.66	106.166	10	0	176.40	163.333
7	0	123.48	114.666	10	5	185.22	171.481
7	5	132.30	122.500	11	0	194.04	179.629
8	0	141.12	130.666	11	5	202.86	187.879
8	5	149.94	139.000	12	0	211.68	196.000

Note.—The above calculations are made on the supposition that one candy of cotton weighs here 5.88 piculs. A tael is equal to 3 rupees, at the exchange of 216 rupees per \$100.

Section 2.

RELATING TO EXCHANGES.

Table 7.—Showing the Amounts from which $1\frac{1}{2}$ per cent. being deducted leaves the sum given, as far as \$100.

Given Sum in Dols.	Percentage included is	Given Sum in Dols.	Percentage included is	Given Sum in Dols.	Percentage included is	Given Sum in Dols.	Percentage included is	Given Sum in Dols.	Percentage included is
1	\$1.0113	21	\$21.2389	41	\$41.4645	61	\$61.6941	81	\$81.9216
2	2.0227	22	22.2503	42	42.4779	62	62.7054	82	82.9330
3	3.0341	23	23.2617	43	43.4892	63	63.7168	83	83.9444
4	4.0455	24	24.2731	44	44.5006	64	64.7282	84	84.9557
5	5.0569	25	25.2845	45	45.5120	65	65.7396	85	85.9671
6	6.0682	26	26.2958	46	46.5234	66	66.7509	86	86.9785
7	7.0796	27	27.3072	47	47.5347	67	67.7623	87	87.9899
8	8.0910	28	28.3186	48	48.5461	68	68.7737	88	88.0013
9	9.1024	29	29.3299	49	49.5575	69	69.7851	89	90.0126
10	10.1137	30	30.3413	50	50.5689	70	70.7965	90	91.0240
11	11.1251	31	31.3527	51	51.5803	71	71.8078	91	92.0354
12	12.1365	32	32.3641	52	52.5916	72	72.8192	92	93.0468
13	13.1479	33	33.3757	53	53.6030	73	73.8306	93	94.0581
14	14.1593	34	34.3868	54	54.6144	74	74.8428	94	95.0695
15	15.1706	35	35.3982	55	55.6258	75	75.8534	95	96.0809
16	16.1820	36	36.4096	56	56.6372	76	76.8647	96	97.0923
17	17.1934	37	37.4210	57	57.6485	77	77.8761	97	98.1037
18	18.2048	38	38.4324	58	58.6599	78	78.8865	98	99.1150
19	19.2162	39	39.4437	59	59.6713	79	79.8989	99	100.1264
20	20.2276	40	40.4551	60	60.6827	80	80.9102	100	101.1379

This Table is convenient in estimating charges for selling exchange;—negotiating bill, 1 per cent, and brokerage $\frac{1}{2}$ per cent.

Table 2.—Table for converting Taels into Dollars.

Amount	715 taels per 1000 dollars.	717 taels per 1000 dollars.	720 taels per 1000 dollars.	Amount	715 taels per 1000 dollars.	717 taels per 1000 dollars.	720 taels per 1000 dollars.
<i>am. cond.</i>	<i>cts. mil's.</i>	<i>cts. mil's.</i>	<i>cts. mil's.</i>	<i>am. cond.</i>	<i>D. cents.</i>	<i>D. cents.</i>	<i>D. cents.</i>
1	.013	.013	.013	5 7	0.797	0.793	0.791
2	.027	.027	.027	5 8	0.811	0.809	0.808
3	.041	.041	.041	5 9	0.825	0.823	0.819
4	.055	.055	.055	6 0	0.839	0.836	0.833
5	.069	.069	.069	6 1	0.853	0.850	0.847
6	.083	.083	.083	6 2	0.867	0.864	0.861
7	.097	.097	.097	6 3	0.881	0.878	0.875
8	.111	.111	.111	6 4	0.895	0.892	0.888
9	.125	.125	.125	6 5	0.909	0.906	0.902
1 0	.139	.139	.138	6 6	0.923	0.920	0.916
1 1	.153	.153	.152	6 7	0.937	0.934	0.930
1 2	.167	.167	.166	6 8	0.951	0.948	0.944
1 3	.181	.181	.180	6 9	0.965	0.962	0.958
1 4	.195	.195	.194	7 0	0.979	0.976	0.972
1 5	.209	.209	.207	7 1	0.993	0.990	0.986
1 6	.223	.223	.221	7 2	1.007	1.004	1.000
1 7	.237	.237	.235	7 3	1.022	1.018	1.013
1 8	.251	.251	.250	7 4	1.034	1.032	1.027
1 9	.265	.265	.263	7 5	1.048	1.046	1.041
2 0	.279	.278	.277	7 6	1.062	1.059	1.054
2 1	.293	.292	.291	<i>Taels</i>	1.398	1.394	1.388
2 2	.307	.306	.305	2	2.797	2.789	2.777
2 3	.321	.320	.319	3	4.195	4.183	4.166
2 4	.335	.334	.333	4	5.594	5.578	5.555
2 5	.349	.348	.346	5	6.993	6.973	6.944
2 6	.363	.362	.360	6	8.391	8.368	8.333
2 7	.377	.376	.374	7	9.790	9.762	9.722
2 8	.391	.390	.388	8	11.188	11.157	11.111
2 9	.405	.404	.402	9	12.587	12.552	12.500
3 0	.419	.418	.416	10	13.986	13.947	13.888
3 1	.433	.432	.430	11	15.384	15.341	15.277
3 2	.447	.446	.444	12	16.783	16.736	16.666
3 3	.461	.460	.458	13	18.181	18.131	18.055
3 4	.475	.474	.472	14	19.580	19.525	19.443
3 5	.489	.488	.485	15	20.979	20.920	20.833
3 6	.503	.502	.500	16	22.377	22.315	22.222
3 7	.517	.516	.513	17	23.776	23.709	23.611
3 8	.531	.530	.527	18	25.174	25.104	25.000
3 9	.544	.543	.541	19	26.573	26.499	26.388
4 0	.559	.557	.555	20	27.972	27.894	27.777
4 1	.573	.571	.569	25	34.965	34.867	34.722
4 2	.587	.585	.583	30	41.958	41.840	41.666
4 3	.601	.599	.597	40	55.944	55.768	55.555
4 4	.615	.613	.611	50	69.930	69.735	69.444
4 5	.629	.628	.624	75	104.895	104.602	104.166
4 6	.643	.641	.638	90	125.874	125.520	125.000
4 7	.657	.655	.652	100	139.860	139.470	138.888
4 8	.671	.669	.666	200	279.720	278.940	277.777
4 9	.685	.683	.680	300	419.580	418.410	416.666
5 0	.699	.697	.694	400	559.440	557.880	555.555
5 1	.713	.711	.700	500	699.300	697.350	694.444
5 2	.727	.725	.722	600	839.160	836.820	833.333
5 3	.741	.739	.736	700	979.020	976.290	972.222
5 4	.755	.753	.749	800	1118.880	1115.760	1111.111
5 5	.769	.767	.763	900	1258.741	1255.230	1250.000
5 6	.783	.781	.777	1000	1398.601	1394.700	1388.888

Table 10.—Table for converting Dollars into Taels.

Amount	Tls. 715 per 1000 dollars.	Tls. 717 per 1000 dollars.	Tls. 720 per 1000 dollars.	Amount	715 taels per 1000 dollars.	717 taels per 1000 dollars.	720 taels per 1000 dollars.
<i>Cents.</i>	<i>m.c.c.</i>	<i>m.c.c.</i>	<i>m.c.c.</i>	<i>Cents.</i>	<i>T. m.c.c.</i>	<i>T. m.c.c.</i>	<i>T. m.c.c.</i>
1	007	007	007	57	.407	.408	.410
2	014	014	014	58	.414	.415	.417
3	021	021	021	59	.421	.423	.424
4	028	028	028	60	.429	.430	.432
5	035	035	036	61	.436	.437	.439
6	042	043	043	62	.443	.444	.446
7	049	050	050	63	.450	.451	.453
8	056	057	057	64	.457	.458	.460
9	064	064	064	65	.464	.466	.468
10	071	071	072	66	.471	.473	.475
11	078	078	079	67	.479	.480	.482
12	085	085	086	68	.486	.487	.489
13	092	093	093	69	.493	.494	.496
14	099	100	100	70	.500	.501	.504
15	106	107	108	71	.507	.509	.511
16	113	114	115	72	.514	.516	.518
17	121	121	122	73	.521	.523	.525
18	128	128	129	74	.529	.530	.532
19	135	136	136	75	.536	.538	.540
20	142	143	144	76	.543	.545	.547
21	149	150	151	\$1	0.715	0.717	0.720
22	156	157	158	2	1.430	1.434	1.440
23	163	164	165	3	2.145	2.151	2.160
24	170	171	172	4	2.860	2.868	2.880
25	178	179	180	5	3.575	3.585	3.600
26	185	186	187	6	4.290	4.302	4.320
27	192	193	194	7	5.005	5.019	5.040
28	199	200	201	8	5.720	5.736	5.760
29	206	207	208	9	6.435	6.453	6.480
30	213	214	216	10	7.150	7.170	7.200
31	220	221	223	11	7.865	7.887	7.920
32	227	229	230	12	8.580	8.604	8.640
33	234	236	237	13	9.295	9.321	9.360
34	242	243	244	14	10.010	10.038	10.080
35	249	250	252	15	10.725	10.755	10.800
36	256	257	259	16	11.440	11.472	11.520
37	263	264	266	17	12.155	12.189	12.240
38	270	272	273	18	12.870	12.906	12.960
39	277	279	280	19	13.585	13.623	13.680
40	284	286	288	20	14.300	14.340	14.400
41	291	293	295	30	21.450	21.510	21.600
42	299	300	302	40	28.600	28.680	28.800
43	306	307	309	50	35.750	35.850	36.000
44	313	315	316	60	42.900	43.020	43.200
45	320	322	324	80	57.200	57.360	57.600
46	327	329	331	90	64.350	64.530	64.800
47	335	336	338	100	71.500	71.700	72.000
48	343	344	345	200	143.000	143.400	144.000
49	350	351	352	300	214.500	215.100	216.000
50	357	358	360	400	286.000	286.800	288.000
51	364	365	367	500	357.500	358.500	360.000
52	371	372	374	600	429.000	430.200	432.000
53	379	380	381	700	500.500	501.900	504.000
54	386	387	388	800	572.000	573.600	576.000
55	393	394	396	900	643.500	645.300	648.000
56	400	401	403	1000	715.000	717.000	720.000

Table 11.—Exchange of Rupees into Dollars at Three Rates.

	Exchange of 216 Rs. per \$100	Exchange of 220 Rs. per \$100	Exchange of 225 Rs. per \$100		Exchange of 216 Rs. per \$100	Exchange of 220 Rs. per \$100	Exchange of 225 Rs. per \$100
<i>Pice</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>	<i>Rupees</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>
1	.002	.002	.002	25	11.573	11.363	11.111
2	.005	.005	.004	26	12.037	11.818	11.555
3	.007	.007	.006	27	12.500	12.272	12.000
4	.010	.010	.009	28	12.962	12.727	12.444
5	.012	.012	.011	29	13.425	13.181	12.888
6	.014	.014	.013	30	13.888	13.636	13.333
7	.017	.017	.016	31	14.351	14.080	13.777
8	.019	.019	.018	32	14.814	14.545	14.222
9	.021	.021	.020	33	15.277	15.000	14.666
10	.024	.024	.023	34	15.740	15.454	15.111
11	.026	.026	.025	35	16.203	15.909	15.555
<i>Annas</i>				36	16.666	16.363	16.000
1	.028	.028	.027	37	17.129	16.818	16.444
2	.057	.056	.055	38	17.592	17.272	16.888
3	.087	.084	.083	39	18.055	17.727	17.333
4	.115	.113	.111	40	18.518	18.181	17.777
5	.145	.140	.138	41	18.981	18.636	18.222
6	.175	.168	.166	42	19.444	19.090	18.666
7	.202	.197	.194	43	19.907	19.545	19.111
8	.231	.227	.222	44	20.370	20.000	19.555
9	.260	.255	.249	45	20.833	20.454	20.000
10	.289	.283	.277	46	21.296	20.909	20.444
11	.321	.312	.305	47	21.759	21.363	20.888
12	.347	.341	.333	48	22.222	21.818	21.333
13	.378	.369	.360	49	22.685	22.272	21.777
14	.405	.397	.388	50	23.148	22.727	22.222
15	.434	.425	.416	51	23.611	23.181	22.666
<i>Rupees</i>				52	24.074	23.636	23.111
1	.463	.454	.444	53	24.537	24.090	23.555
2	.926	.909	.888	54	25.000	24.545	24.000
3	1.389	1.363	1.333	55	25.462	25.000	24.444
4	1.851	1.818	1.777	56	25.924	25.454	24.888
5	2.314	2.272	2.222	57	26.387	25.909	25.333
6	2.777	2.727	2.666	58	26.851	26.363	25.777
7	3.240	3.181	3.111	59	27.315	26.818	26.222
8	3.703	3.636	3.555	60	27.777	27.272	26.666
9	4.166	4.090	4.000	61	28.240	27.727	27.111
10	4.629	4.545	4.444	62	28.702	28.181	27.555
11	5.092	5.000	4.888	63	29.166	28.636	28.000
12	5.555	5.454	5.333	64	29.629	29.090	28.444
13	6.018	5.909	5.777	65	30.092	29.545	28.888
14	6.481	6.363	6.222	66	30.555	30.000	29.333
15	6.944	6.818	6.666	67	31.018	30.454	29.777
16	7.407	7.263	7.111	68	31.480	30.909	30.222
17	7.870	7.727	7.555	69	31.943	31.363	30.666
18	8.333	8.181	8.000	70	32.407	31.818	31.111
19	8.796	8.636	8.444	71	32.870	32.272	31.555
20	9.259	9.090	8.888	72	33.333	32.727	32.000
21	9.722	9.545	9.333	73	33.796	33.181	32.444
22	10.185	10.000	9.777	74	34.258	33.636	32.888
23	10.648	10.454	10.222	75	34.722	34.090	33.333
24	11.111	10.909	10.666	76	35.184	34.545	33.777
				77	35.647	35.000	34.222
				78	36.110	35.454	34.666

Table 11.—Exchange of Rupees into Dollars at Three Rates.

	Exchange of 216 Rs. per \$100	Exchange of 220 Rs. per \$100	Exchange of 225 Rs. per \$100		Exchange of 216 Rs. per \$100	Exchange of 220 Rs. per \$100	Exchange of 225 Rs. per \$100
<i>Rupees</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>	<i>Rupees</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>	<i>Dolls. Cts.</i>
79	36.574	35.909	35.111	1700	787.037	772.727	755.555
80	37.037	36.363	35.555	1750	810.185	795.454	777.777
81	37.500	36.818	36.000	1800	833.333	818.181	800.000
82	37.963	37.272	36.444	1850	856.481	840.909	822.222
83	38.425	37.727	36.888	1900	879.629	863.636	844.444
84	38.888	38.181	37.333	1950	902.777	886.363	866.666
85	39.351	38.636	37.777	2000	925.926	909.090	888.888
86	39.814	39.090	38.222	2100	972.222	954.545	933.333
87	40.277	39.545	38.666	2200	1018.518	1000.000	977.777
88	40.740	40.000	39.111	2300	1064.814	1045.454	1022.222
89	41.203	40.454	39.555	2400	1111.111	1090.909	1066.666
90	41.666	40.909	40.000	2500	1157.407	1136.363	1111.111
91	42.129	41.363	40.444	2600	1203.702	1181.818	1155.555
92	42.592	41.818	40.888	2700	1250.000	1227.272	1200.000
93	43.055	42.272	41.333	2800	1296.296	1272.727	1244.444
94	43.518	42.727	41.777	2900	1342.594	1318.181	1288.888
95	43.981	43.181	42.222	3000	1388.888	1363.636	1333.333
96	44.444	43.636	42.666	3100	1435.185	1409.090	1377.777
97	44.907	44.090	43.111	3200	1481.482	1454.545	1422.222
98	45.310	44.545	43.555	3300	1527.777	1500.000	1466.666
99	45.833	45.000	44.000	3400	1574.074	1545.454	1511.111
100	46.296	45.454	44.444	3500	1620.370	1590.909	1555.555
150	69.444	68.181	66.666	3600	1666.666	1636.363	1600.000
200	92.592	90.909	88.888	3700	1712.963	1681.818	1644.444
250	115.740	113.636	111.111	3800	1759.218	1727.272	1688.888
300	130.888	136.363	133.333	3900	1805.555	1772.727	1733.333
350	162.037	159.090	155.555	4000	1851.851	1818.181	1777.777
400	185.185	181.818	177.777	4100	1898.149	1863.636	1822.222
450	208.333	204.545	200.000	4200	1944.444	1909.090	1866.666
500	231.481	227.272	222.222	4300	1990.740	1945.454	1911.111
550	254.629	250.000	244.444	4400	2037.037	2000.000	1955.555
600	277.777	272.727	266.666	4500	2083.333	2045.454	2000.000
650	300.921	295.454	288.888	4600	2129.629	2090.909	2044.444
700	324.074	318.181	311.111	4700	2175.925	2136.363	2088.888
750	347.222	340.909	333.333	4800	2222.222	2181.818	2133.333
800	370.370	363.636	355.555	4900	2268.518	2227.272	2177.777
850	393.516	386.363	377.777	5000	2314.814	2272.727	2222.222
900	416.666	409.090	400.000	6000	2777.777	2727.272	2666.666
950	439.814	431.818	422.222	7000	3240.740	3181.818	3111.111
1000	462.964	454.545	444.444	8000	3703.703	3636.363	3555.555
1100	509.259	500.000	488.888	9000	4166.666	4090.909	4000.000
1150	532.407	522.727	511.111	10,000	4629.629	4545.454	4444.444
1200	555.555	545.454	533.333	15,000	6944.444	6818.181	6666.666
1250	578.703	568.181	555.555	20,000	9259.259	9090.909	8888.888
1300	601.851	590.909	577.777	25,000	1157.407	11363.636	11111.111
1350	625.000	613.636	600.000	30,000	13888.888	13636.363	13333.333
1400	648.148	636.363	622.222	40,000	18181.818	18181.818	17777.777
1450	671.296	659.090	644.444	50,000	23148.148	22727.272	22222.222
1500	694.444	681.818	666.666	60,000	27777.777	27272.727	26666.666
1550	717.593	704.545	688.888	70,000	32407.407	31818.181	31111.111
1600	740.741	727.272	711.111	80,000	37070.707	36363.636	35555.555
1650	763.888	750.000	733.333	90,000	41666.666	40909.090	40000.000

Table 12.—Exchange of Dollars into Rupees at Three Rates.

	Exchange of \$100 for 216 Rupees.			Exchange of \$100 for 220 Rupees.			Exchange of \$100 for 225 Rupees.				Exchange of \$100 for 216 Rupees.			Exchange of \$100 for 220 Rupees.			Exchange of \$100 for 225 Rupees.		
Cents.	R.	A.	P.	R.	A.	P.	R.	A.	P.	Cents.	R.	A.	P.	R.	A.	P.	R.	A.	P.
1	0	0	4 $\frac{1}{2}$	0	0	4 $\frac{1}{2}$	0	0	4 $\frac{1}{2}$	51	1	1	7 $\frac{1}{2}$	1	1	11 $\frac{1}{2}$	1	2	4 $\frac{1}{2}$
2	0	0	8 $\frac{1}{2}$	0	0	8 $\frac{1}{2}$	0	0	8 $\frac{1}{2}$	52	1	1	11 $\frac{1}{2}$	1	1	2 $\frac{1}{2}$	1	2	8 $\frac{1}{2}$
3	0	1	0 $\frac{1}{2}$	0	1	0 $\frac{1}{2}$	0	1	0 $\frac{1}{2}$	53	1	2	3 $\frac{1}{2}$	1	2	7 $\frac{1}{2}$	1	3	0 $\frac{1}{2}$
4	0	1	4 $\frac{1}{2}$	0	1	4 $\frac{1}{2}$	0	1	5 $\frac{1}{2}$	54	1	2	8 $\frac{1}{2}$	1	3	0 $\frac{1}{2}$	1	3	5 $\frac{1}{2}$
5	0	1	8 $\frac{1}{2}$	0	1	9 $\frac{1}{2}$	0	1	9 $\frac{1}{2}$	55	1	3	0 $\frac{1}{2}$	1	3	4 $\frac{1}{2}$	1	3	1 $\frac{1}{2}$
6	0	2	0 $\frac{1}{2}$	0	2	1 $\frac{1}{2}$	0	2	1 $\frac{1}{2}$	56	1	3	4 $\frac{1}{2}$	1	3	8 $\frac{1}{2}$	1	4	1 $\frac{1}{2}$
7	0	2	5 $\frac{1}{2}$	0	2	5 $\frac{1}{2}$	0	2	6 $\frac{1}{2}$	57	1	3	8 $\frac{1}{2}$	1	4	0 $\frac{1}{2}$	1	4	6 $\frac{1}{2}$
8	0	2	9 $\frac{1}{2}$	0	2	9 $\frac{1}{2}$	0	2	10 $\frac{1}{2}$	58	1	4	0 $\frac{1}{2}$	1	4	5 $\frac{1}{2}$	1	4	10 $\frac{1}{2}$
9	0	3	1 $\frac{1}{2}$	0	3	2 $\frac{1}{2}$	0	3	2 $\frac{1}{2}$	59	1	4	4 $\frac{1}{2}$	1	4	9 $\frac{1}{2}$	1	5	2 $\frac{1}{2}$
10	0	3	5 $\frac{1}{2}$	0	3	6 $\frac{1}{2}$	0	3	7 $\frac{1}{2}$	60	1	4	8 $\frac{1}{2}$	1	5	1 $\frac{1}{2}$	1	5	7 $\frac{1}{2}$
11	0	3	9 $\frac{1}{2}$	0	3	10 $\frac{1}{2}$	0	3	11 $\frac{1}{2}$	61	1	5	1 $\frac{1}{2}$	1	5	5 $\frac{1}{2}$	1	5	11 $\frac{1}{2}$
12	0	4	1 $\frac{1}{2}$	0	4	2 $\frac{1}{2}$	0	4	3 $\frac{1}{2}$	62	1	5	5 $\frac{1}{2}$	1	5	9 $\frac{1}{2}$	1	6	3 $\frac{1}{2}$
13	0	4	6 $\frac{1}{2}$	0	4	7 $\frac{1}{2}$	0	4	8 $\frac{1}{2}$	63	1	5	9 $\frac{1}{2}$	1	6	2 $\frac{1}{2}$	1	6	8 $\frac{1}{2}$
14	0	4	10 $\frac{1}{2}$	0	4	11 $\frac{1}{2}$	0	5	0 $\frac{1}{2}$	64	1	6	1 $\frac{1}{2}$	1	6	6 $\frac{1}{2}$	1	7	0 $\frac{1}{2}$
15	0	5	2 $\frac{1}{2}$	0	5	3 $\frac{1}{2}$	0	5	4 $\frac{1}{2}$	65	1	6	5 $\frac{1}{2}$	1	6	10 $\frac{1}{2}$	1	7	4 $\frac{1}{2}$
16	0	5	6 $\frac{1}{2}$	0	5	7 $\frac{1}{2}$	0	5	8 $\frac{1}{2}$	66	1	6	9 $\frac{1}{2}$	1	7	2 $\frac{1}{2}$	1	7	9 $\frac{1}{2}$
17	0	5	10 $\frac{1}{2}$	0	5	11 $\frac{1}{2}$	0	6	1 $\frac{1}{2}$	67	1	7	1 $\frac{1}{2}$	1	7	7 $\frac{1}{2}$	1	8	1 $\frac{1}{2}$
18	0	6	2 $\frac{1}{2}$	0	6	4 $\frac{1}{2}$	0	6	5 $\frac{1}{2}$	68	1	7	6 $\frac{1}{2}$	1	7	11 $\frac{1}{2}$	1	8	5 $\frac{1}{2}$
19	0	6	6 $\frac{1}{2}$	0	6	8 $\frac{1}{2}$	0	6	10 $\frac{1}{2}$	69	1	7	10 $\frac{1}{2}$	1	8	3 $\frac{1}{2}$	1	8	10 $\frac{1}{2}$
20	0	6	11 $\frac{1}{2}$	0	7	0 $\frac{1}{2}$	0	7	2 $\frac{1}{2}$	70	1	8	2 $\frac{1}{2}$	1	8	7 $\frac{1}{2}$	1	9	2 $\frac{1}{2}$
21	0	7	5 $\frac{1}{2}$	0	7	4 $\frac{1}{2}$	0	7	6 $\frac{1}{2}$	71	1	8	6 $\frac{1}{2}$	1	9	0 $\frac{1}{2}$	1	9	6 $\frac{1}{2}$
22	0	7	9 $\frac{1}{2}$	0	7	8 $\frac{1}{2}$	0	7	11 $\frac{1}{2}$	72	1	8	10 $\frac{1}{2}$	1	9	4 $\frac{1}{2}$	1	9	11 $\frac{1}{2}$
23	0	7	11 $\frac{1}{2}$	0	8	1 $\frac{1}{2}$	0	8	3 $\frac{1}{2}$	73	1	9	2 $\frac{1}{2}$	1	9	8 $\frac{1}{2}$	1	8	3 $\frac{1}{2}$
24	0	8	3 $\frac{1}{2}$	0	8	5 $\frac{1}{2}$	0	8	7 $\frac{1}{2}$	74	1	9	6 $\frac{1}{2}$	1	10	0 $\frac{1}{2}$	1	8	7 $\frac{1}{2}$
25	0	8	7 $\frac{1}{2}$	0	8	9 $\frac{1}{2}$	0	9	0 $\frac{1}{2}$	75	1	9	11 $\frac{1}{2}$	1	10	4 $\frac{1}{2}$	1	11	0 $\frac{1}{2}$
26	0	8	11 $\frac{1}{2}$	0	9	1 $\frac{1}{2}$	0	9	4 $\frac{1}{2}$	76	1	10	3 $\frac{1}{2}$	1	10	9 $\frac{1}{2}$	1	11	4 $\frac{1}{2}$
27	0	9	8 $\frac{1}{2}$	0	9	6 $\frac{1}{2}$	0	9	8 $\frac{1}{2}$	77	1	10	7 $\frac{1}{2}$	1	11	1 $\frac{1}{2}$	1	11	8 $\frac{1}{2}$
28	0	9	8 $\frac{1}{2}$	0	9	10 $\frac{1}{2}$	0	10	0 $\frac{1}{2}$	78	1	10	11 $\frac{1}{2}$	1	11	5 $\frac{1}{2}$	1	12	0 $\frac{1}{2}$
29	0	10	0 $\frac{1}{2}$	0	10	2 $\frac{1}{2}$	0	10	5 $\frac{1}{2}$	79	1	11	3 $\frac{1}{2}$	1	11	9 $\frac{1}{2}$	1	12	5 $\frac{1}{2}$
30	0	10	4 $\frac{1}{2}$	0	10	6 $\frac{1}{2}$	0	10	9 $\frac{1}{2}$	80	1	11	7 $\frac{1}{2}$	1	12	2 $\frac{1}{2}$	1	12	9 $\frac{1}{2}$
31	0	10	8 $\frac{1}{2}$	0	10	11 $\frac{1}{2}$	0	11	1 $\frac{1}{2}$	81	1	12	0 $\frac{1}{2}$	1	12	6 $\frac{1}{2}$	1	13	1 $\frac{1}{2}$
32	0	11	0 $\frac{1}{2}$	0	11	3 $\frac{1}{2}$	0	11	6 $\frac{1}{2}$	82	1	12	4 $\frac{1}{2}$	1	12	10 $\frac{1}{2}$	1	13	6 $\frac{1}{2}$
33	0	11	4 $\frac{1}{2}$	0	11	7 $\frac{1}{2}$	0	11	10 $\frac{1}{2}$	83	1	12	8 $\frac{1}{2}$	1	13	2 $\frac{1}{2}$	1	13	10 $\frac{1}{2}$
34	0	11	9 $\frac{1}{2}$	0	11	11 $\frac{1}{2}$	0	12	2 $\frac{1}{2}$	84	1	13	0 $\frac{1}{2}$	1	13	6 $\frac{1}{2}$	1	14	2 $\frac{1}{2}$
35	0	12	1 $\frac{1}{2}$	0	12	3 $\frac{1}{2}$	0	12	7 $\frac{1}{2}$	85	1	13	4 $\frac{1}{2}$	1	13	11 $\frac{1}{2}$	1	14	7 $\frac{1}{2}$
36	0	12	5 $\frac{1}{2}$	0	12	8 $\frac{1}{2}$	0	12	11 $\frac{1}{2}$	86	1	13	8 $\frac{1}{2}$	1	14	5 $\frac{1}{2}$	1	14	11 $\frac{1}{2}$
37	0	12	9 $\frac{1}{2}$	0	13	0 $\frac{1}{2}$	0	13	3 $\frac{1}{2}$	87	1	14	0 $\frac{1}{2}$	1	14	7 $\frac{1}{2}$	1	15	3 $\frac{1}{2}$
38	0	13	1 $\frac{1}{2}$	0	13	4 $\frac{1}{2}$	0	13	8 $\frac{1}{2}$	88	1	14	5 $\frac{1}{2}$	1	14	11 $\frac{1}{2}$	1	15	8 $\frac{1}{2}$
39	0	13	5 $\frac{1}{2}$	0	13	8 $\frac{1}{2}$	0	14	0 $\frac{1}{2}$	89	1	14	9 $\frac{1}{2}$	1	15	4 $\frac{1}{2}$	2	0	0 $\frac{1}{2}$
40	0	13	9 $\frac{1}{2}$	0	14	1 $\frac{1}{2}$	0	14	5 $\frac{1}{2}$	90	1	15	1 $\frac{1}{2}$	1	15	8 $\frac{1}{2}$	2	0	4 $\frac{1}{2}$
41	0	14	2 $\frac{1}{2}$	0	14	5 $\frac{1}{2}$	0	14	9 $\frac{1}{2}$	91	1	15	5 $\frac{1}{2}$	2	0	0 $\frac{1}{2}$	2	0	9 $\frac{1}{2}$
42	0	14	6 $\frac{1}{2}$	0	14	9 $\frac{1}{2}$	0	15	1 $\frac{1}{2}$	92	1	15	10 $\frac{1}{2}$	2	0	4 $\frac{1}{2}$	2	1	1 $\frac{1}{2}$
43	0	14	10 $\frac{1}{2}$	0	15	1 $\frac{1}{2}$	0	15	5 $\frac{1}{2}$	93	2	0	1 $\frac{1}{2}$	2	0	8 $\frac{1}{2}$	2	1	5 $\frac{1}{2}$
44	0	15	2 $\frac{1}{2}$	0	15	5 $\frac{1}{2}$	0	15	10 $\frac{1}{2}$	94	2	0	6 $\frac{1}{2}$	2	1	1 $\frac{1}{2}$	2	1	10 $\frac{1}{2}$
45	0	15	6 $\frac{1}{2}$	0	15	10 $\frac{1}{2}$	1	0	2 $\frac{1}{2}$	95	2	0	10 $\frac{1}{2}$	2	1	5 $\frac{1}{2}$	2	2	2 $\frac{1}{2}$
46	0	15	10 $\frac{1}{2}$	1	0	2 $\frac{1}{2}$	1	0	6 $\frac{1}{2}$	96	2	1	2 $\frac{1}{2}$	2	1	9 $\frac{1}{2}$	2	2	6 $\frac{1}{2}$
47	1	0	3 $\frac{1}{2}$	1	0	6 $\frac{1}{2}$	1	0	11 $\frac{1}{2}$	97	2	1	6 $\frac{1}{2}$	2	2	1 $\frac{1}{2}$	2	2	11 $\frac{1}{2}$
48	1	0	7 $\frac{1}{2}$	1	0	10 $\frac{1}{2}$	1	1	3 $\frac{1}{2}$	98	2	1	10 $\frac{1}{2}$	2	2	6 $\frac{1}{2}$	2	3	3 $\frac{1}{2}$
49	1	0	11 $\frac{1}{2}$	1	1	3 $\frac{1}{2}$	1	1	7 $\frac{1}{2}$	99	2	2	2 $\frac{1}{2}$	2	2	10 $\frac{1}{2}$	2	3	7 $\frac{1}{2}$
50	1	1	3 $\frac{1}{2}$	1	1	8 $\frac{1}{2}$	1	2	0 $\frac{1}{2}$										

Table 12.—Exchange of Dollars into Rupees at Three Rates.

Dollars	Exchange of			Dollars	Exchange of		
	\$100 for 216 Rupees.	\$100 for 220 Rupees.	\$100 for 225 Rupees.		\$100 for 216 Rupees.	\$100 for 220 Rupees.	\$100 for 225 Rupees.
R. A. P.	R. A. P.	R. A. P.	R. A.	R. A. P.	R. A. P.	R. A. P.	R. A.
1	2 2 7	2 3 3	2 4	51	110 2 7	112 3 3	114 12
2	4 5 2	4 6 5	4 8	52	112 5 2	114 6 6	117 0
3	6 7 8	6 9 8	6 12	53	114 7 8	116 9 8	119 4
4	8 10 3	8 12 10	9 0	54	116 10 3	118 12 10	121 8
5	10 12 10	11 0 0	11 4	55	118 12 10	121 0 0	123 12
6	12 15 5	13 3 3	13 8	56	120 15 5	123 3 3	126 0
7	15 1 11	15 5 5	15 12	57	123 1 11	125 6 6	128 4
8	17 4 6	17 9 8	18 0	58	125 4 6	127 9 8	130 8
9	19 7 1	19 12 10	20 4	59	127 7 1	129 12 10	132 12
10	21 9 7	22 0 0	22 8	60	129 9 7	132 0 0	135 0
11	23 12 2	24 3 3	24 12	65	140 6 5	143 0 0	146 4
12	25 14 9	26 6 6	27 0	70	151 3 3	154 0 0	157 8
13	27 1 4	28 9 8	29 4	75	162 0 0	165 0 0	168 12
14	30 3 10	30 12 10	31 8	80	172 12 10	176 0 0	180 0
15	32 6 5	33 0 0	33 12	85	183 9 7	187 0 0	191 4
16	34 9 0	35 3 3	36 0	90	194 6 5	198 0 0	202 8
17	36 11 7	37 6 6	38 4	95	205 3 3	209 0 0	213 12
18	38 14 2	39 9 8	40 8	100	Rs. 216	Rs. 220	R s. 225
19	41 0 8	41 12 10	42 12	150	324	330	337.8
20	43 3 3	44 0 0	45 0	200	432	440	450
21	45 5 10	46 3 3	47 4	250	540	550	562.8
22	47 8 4	48 6 6	49 8	300	648	660	675
23	49 10 11	50 9 8	51 12	350	756	770	787.8
24	51 13 6	52 12 10	54 0	400	864	880	900
25	54 0 0	55 0 0	56 4	450	972	990	1,012.8
26	56 2 7	57 3 3	58 8	500	1,080	1,100	1,125
27	58 5 2	59 6 6	60 12	550	1,138	1,210	1,237.8
28	60 7 8	61 9 8	63 0	600	1,296	1,320	1,350
29	62 10 3	63 12 10	65 4	650	1,404	1,430	1,462.8
30	64 12 10	66 0 0	67 8	700	1,512	1,540	1,575
31	66 15 5	68 3 3	69 12	750	1,620	1,650	1,687.8
32	69 1 11	70 6 6	72 0	800	1,728	1,760	1,800
33	71 4 6	72 9 8	74 4	850	1,836	1,870	1,912.8
34	73 7 1	74 12 10	76 8	900	1,944	1,980	2,025
35	75 9 7	77 0 0	78 12	950	2,052	2,090	2,137.8
36	77 12 2	79 3 3	81 0	1,000	2,160	2,200	2,250
37	79 14 9	81 6 6	83 4	2,000	4,320	4,400	4,500
38	82 1 4	83 9 8	85 8	3,000	6,480	6,600	6,750
39	84 3 10	85 12 10	87 12	4,000	8,640	8,800	9,000
40	86 6 5	88 0 0	90 0	5,000	10,800	11,000	11,250
41	88 9 0	90 3 3	92 4	6,000	12,960	13,200	13,500
42	90 11 7	92 6 6	94 8	7,000	15,120	15,400	15,750
43	92 14 2	94 9 8	96 12	8,000	17,280	17,600	18,000
44	95 0 8	96 12 10	99 0	9,000	19,440	19,800	20,250
45	97 3 3	99 0 0	101 4	10,000	21,600	22,000	22,500
46	99 5 10	101 8 3	103 8	20,000	43,200	44,000	45,000
47	101 8 4	103 6 6	105 12	30,000	64,800	66,000	67,500
48	103 10 11	105 9 8	108 0	40,000	86,400	88,000	90,000
49	105 13 6	107 12 10	110 4	50,000	108,000	110,000	112,500
50	108 0 0	110 0 0	112 8	60,000	129,600	132,000	135,000

Table 12.—Table for reducing Annas and Pie to Decimals of a Rupee, and vice versa.

Annas	0	1 pie	2 pie	3 pie	4 pie	5 pie	6 pie	7 pie	8 pie	9 pie	10 pie	11 pie
0	.0000	.0052	.0104	.0156	.0208	.0260	.0312	.0365	.0417	.0469	.0521	.0573
1	.0625	.0677	.0729	.0781	.0833	.0885	.0937	.0990	.1042	.1094	.1146	.1198
2	.1250	.1302	.1354	.1406	.1458	.1510	.1562	.1615	.1667	.1719	.1771	.1823
3	.1875	.1927	.1979	.2031	.2083	.2135	.2187	.2240	.2292	.2344	.2396	.2448
4	.2500	.2552	.2604	.2656	.2708	.2760	.2812	.2864	.2917	.2969	.3021	.3073
5	.3125	.3177	.3229	.3281	.3333	.3385	.3437	.3489	.3542	.3594	.3646	.3698
6	.3750	.3802	.3854	.3906	.3958	.4010	.4062	.4115	.4167	.4219	.4271	.4323
7	.4375	.4427	.4479	.4531	.4583	.4635	.4687	.4740	.4792	.4844	.4896	.4948
8	.5000	.5052	.5104	.5156	.5208	.5260	.5312	.5365	.5417	.5469	.5521	.5573
9	.5625	.5677	.5729	.5781	.5833	.5885	.5937	.5990	.6042	.6094	.6146	.6198
10	.6250	.6302	.6354	.6406	.6458	.6510	.6562	.6615	.6667	.6719	.6771	.6823
11	.6875	.6927	.6979	.7031	.7083	.7135	.7187	.7240	.7292	.7344	.7396	.7448
12	.7500	.7552	.7604	.7656	.7708	.7760	.7812	.7864	.7917	.7969	.8021	.8073
13	.8125	.8177	.8229	.8281	.8333	.8385	.8437	.8490	.8542	.8594	.8646	.8698
14	.8750	.8802	.8854	.8906	.8958	.9010	.9062	.9115	.9167	.9219	.9271	.9323
15	.9375	.9427	.9479	.9531	.9583	.9635	.9687	.9739	.9792	.9844	.9896	.9948

Table 14.—Table showing the Premium of Exchange between China and New York, at various Rates of Exchange between China and England, and between New York and London,

Allowing 2½ per cent. commission, i. e. 1 % remitting in China, ½ % brokerage, ½ % shroffage, and 1 % in New York.

EXCHANGE IN CHINA ON LONDON	EXCHANGE IN NEW YORK ON LONDON			
	108 % at 60 d. sight	109 % at 60 d. sight	110 % at 60 d. sight	
s. d.				
4 6 per dollar.	10½ per cent prem.	11½ per cent prem.	12½ per cent prem.	
4 7 "	12½ " "	13½ " "	14½ " "	
4 8 "	14½ " "	15½ " "	16½ " "	
4 9 "	16½ " "	17½ " "	18½ " "	
4 10 "	18½ " "	19½ " "	20½ " "	
4 11 "	20½ " "	21½ " "	22½ " "	
5 0 "	22½ " "	23½ " "	24½ " "	
5 1 "	24½ " "	25½ " "	26½ " "	
5 2 "	26½ " "	27½ " "	28½ " "	
5 3 "	28½ " "	29½ " "	30½ " "	

Table 15.—To ascertain the equivalent of a sum of Dollars in Sterling Money at rates from 4s. to 6s. 10d.

Rule.—Find the logarithm against the rate of exchange given, multiply it by the sum in dollars and cents, and point off the decimals; the amount on the left will be pounds sterling. Divide the first two figures of the decimal by 5 for shillings, and the third by 4 for pence. A series of 9 in the decimal is to be reckoned as unit in the next higher figure.

Example.—Required the equivalent of \$129.39, at 4s. 11½d. per dollar.

The logarithm against 4s. 11½d. is 24895833
 Multiplied by \$129.39 is 32,21.27163187
 The decimal has ten places, leaving 32 pounds
 The quotient of 21 divided by 5 is 4 shillings
 Adding the remainder 1 to the next figure 2 makes 12,
 divided by 4 is 3 pence

In even logarithms, as at the exchange of even shillings, the operation is easier, by inspection; as \$1000 at 5s., is £250. Where exactness is not required, the three last places in the logarithm may be omitted.

EXCHANGE OF DOLLARS INTO STERLING.

[illegible]

Table 16.—Table for reducing Shillings and Pence to Decimals of a Pound, and vice versa.

Shil- lings	0	1 <i>penny</i>	2 <i>pence</i>	3 <i>pence</i>	4 <i>pence</i>	5 <i>pence</i>	6 <i>pence</i>	7 <i>pence</i>	8 <i>pence</i>	9 <i>pence</i>	10 <i>pence</i>	11 <i>pence</i>
0	.0000	.0041	.0083	.0125	.0166	.0208	.0250	.0291	.0333	.0375	.0416	.0458
1	0500	0541	0583	0625	0666	0708	0750	0791	0833	0875	0916	0958
2	1000	1041	1083	1125	1166	1208	1250	1291	1333	1375	1416	1458
3	1500	1541	1583	1625	1666	1708	1750	1791	1833	1875	1916	1958
4	2000	2041	2083	2125	2166	2208	2250	2291	2333	2375	2416	2458
5	2500	2541	2583	2625	2666	2708	2750	2791	2833	2875	2916	2958
6	3000	3041	3083	3125	3166	3208	3250	3291	3333	3375	3416	3458
7	3500	3541	3583	3625	3666	3708	3750	3791	3833	3875	3916	3958
8	4000	4041	4083	4125	4166	4208	4250	4291	4333	4375	4416	4458
9	4500	4541	4583	4625	4666	4708	4750	4791	4833	4875	4916	4958
10	5000	5041	5083	5125	5166	5208	5250	5291	5333	5375	5416	5458
11	5500	5541	5583	5625	5666	5708	5750	5791	5833	5875	5916	5958
12	6000	6041	6083	6125	6166	6208	6250	6291	6333	6375	6416	6458
13	6500	6541	6583	6625	6666	6708	6750	6791	6833	6875	6916	6958
14	7000	7041	7083	7125	7166	7208	7250	7291	7333	7375	7416	7458
15	7500	7541	7583	7625	7666	7708	7750	7791	7833	7875	7916	7958
16	8000	8041	8083	8125	8166	8208	8250	8291	8333	8375	8416	8458
17	8500	8541	8583	8625	8666	8708	8750	8791	8833	8875	8916	8958
18	9000	9041	9083	9125	9166	9208	9250	9291	9333	9375	9416	9458
19	9500	9541	9583	9625	9666	9708	9750	9791	9833	9875	9916	9958

1 farthing=£0.00104166; 2 farthings=£0.0020833; 3 farthings=£0.003125.

Section 3.

RELATING TO TIME.

Table 17.—To find the number of Days from one Month to the same day in another.

<i>Between</i>	<i>Jan.</i>	<i>Feb.</i>	<i>Mar.</i>	<i>Apr.</i>	<i>May</i>	<i>June</i>	<i>July</i>	<i>Aug.</i>	<i>Sep.</i>	<i>Oct.</i>	<i>Nov.</i>	<i>Dec.</i>
January,.....	365	334	306	275	245	214	184	153	122	92	61	31
February,	31	365	337	306	276	245	215	184	153	123	92	62
March,.....	59	28	365	334	304	273	243	212	181	151	120	90
April,.....	90	59	31	365	335	304	274	243	212	182	151	121
May,.....	120	89	61	30	365	334	304	273	242	212	181	151
June,.....	151	120	92	61	31	365	335	304	273	243	212	182
July,.....	181	150	122	91	61	30	365	334	303	273	242	212
August,	212	181	153	122	92	61	31	365	334	304	273	243
September,.....	243	212	184	153	123	92	62	31	365	335	304	274
October,.....	273	242	214	183	153	122	92	61	30	365	334	304
November,.....	304	273	245	214	184	153	123	92	61	31	365	335
December,	334	303	275	244	214	183	153	122	91	61	30	365

In using Table 17, bear in mind that the month *from* is in the top row, and the month *to* in the left hand column. It must be observed, that in Leap Year, if the end of the month of February be included in the time, one day must be added. If it be desired to find the number of days from a given day in one month to a different day in another, the difference between the dates must be added to, or subtracted from (as the case may be), the amount. For example:—To find the number of days between the 5th of Jan. and 12th of Nov.; to 304 (the number in the table between those two dates) add 7 days, or the time between the 5th and 12th, and it gives 311, and 312 if in leap year.

Table 18.—To find the number of Days from Jan. 1st to Dec. 31st.

Days.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	1	32	60	91	121	152	182	213	244	274	305	335
2	2	33	61	92	122	153	183	214	245	275	306	336
3	3	34	62	93	123	154	184	215	246	276	307	337
4	4	35	63	94	124	155	185	216	247	277	308	338
5	5	36	64	95	125	156	186	217	248	278	309	339
6	6	37	65	96	126	157	187	218	249	279	310	340
7	7	38	66	97	127	158	188	219	250	280	311	341
8	8	39	67	98	128	159	189	220	251	281	312	342
9	9	40	68	99	129	160	190	221	252	282	313	343
10	10	41	69	100	130	161	191	222	253	283	314	344
11	11	42	70	101	131	162	192	223	254	284	315	345
12	12	43	71	102	132	163	193	224	255	285	316	346
13	13	44	72	103	133	164	194	225	256	286	317	347
14	14	45	73	104	134	165	195	226	257	287	318	348
15	15	46	74	105	135	166	196	227	258	288	319	349
16	16	47	75	106	136	167	197	228	259	289	320	350
17	17	48	76	107	137	168	198	229	260	290	321	351
18	18	49	77	108	138	169	199	230	261	291	322	352
19	19	50	78	109	139	170	200	231	262	292	323	353
20	20	51	79	110	140	171	201	232	263	293	324	354
21	21	52	80	111	141	172	202	233	264	294	325	355
22	22	53	81	112	142	173	203	234	265	295	326	356
23	23	54	82	113	143	174	204	235	266	296	327	357
24	24	55	83	114	144	175	205	236	267	297	328	358
25	25	56	84	115	145	176	206	237	268	298	329	359
26	26	57	85	116	146	177	207	238	269	299	330	360
27	27	58	86	117	147	178	208	239	270	300	331	361
28	28	59	87	118	148	179	209	240	271	301	332	362
29	29		88	119	149	180	210	241	272	302	333	363
30	30		89	120	150	181	211	242	273	303	334	364
31	31		90		151		212	243		304		365

In Leap Years, one day must be added after the 28th of February.

THE USES OF THE FOREGOING TABLE.

I. To find the number of days from the end of the year to any day in any month of the year following. *Rule.*—Opposite the given day in the margin, look under the given month, which will show the number of days required.

II. To find the number of days from any particular day to the end of the year; suppose 27th July. From 365 (the days in a year) take the number answering to 27th July, viz. 208; the remainder is 157 days.

III. To find the number of days from any day in one month to any day in another month; suppose from 5th April to 28th November. *Rule.*—Take the difference between the numbers corresponding to those days: *e. g.* between Nov. 28th, the 322d day of the year, and April 5th, the 95th, are 227 days.

IV. To find the number of days between any day in one year to any day in the year following; suppose from 21st August, 1842, to 27th May, 1843. From 365 days in a year, take the number of 21st August, 233 days, which leaves 132 days in 1842; add the number up to 27th May, 147 days, together make the total 279 days required.

Section 4.

COMPARISON OF WEIGHTS.

Table 19.—For converting Chinese Money Weight into English Troy Weight.

<i>Taels.</i>	<i>Oz. dwts. grs. dec.</i>	<i>Taels.</i>	<i>Oz. dwts. grs. dec.</i>	<i>Candar.</i>	<i>Dwts. grs. dec.</i>
100	120 16 0	9	10 17 10.56	9	2 4.1856
50	60 8 0	8	9 13 6.72	8	1 22.3872
25	30 4 0	7	8 9 2.88	7	1 16.5888
24	28 19 20.16	6	7 4 23.04	6	1 10.7904
23	27 15 16.32	5	6 0 19.20	5	1 4.9920
22	26 11 12.48	4	4 16 15.36	4	0 23.1936
21	25 7 8.64	3	3 12 11.52	3	0 17.3952
20	24 3 4.80	2	2 8 7.68	2	0 11.5968
19	22 19 0.96	1	1 4 3.84	1	0 5.7984
18	21 14 21.12	9 Mace	1 1 17.856	9 Cash	0 5.21856
17	20 10 17.28	8	0 19 7.872	8	0 4.63872
16	19 6 13.44	7	0 16 21.888	7	0 4.05888
15	18 2 9.60	6 Candareens.	0 14 11.904	6	0 3.47904
14	16 18 5.76	5	0 12 1.920	5	0 2.89920
13	15 14 1.92	4	0 9 15.936	4	0 2.31936
12	14 9 22.08	3	0 7 5.952	3	0 1.73952
11	13 5 18.24	2	0 4 19.968	2	0 1.15968
10	12 1 14.40	1 or 10	0 2 9.984	1	0 0.57984

Formula for reducing Chinese, English and Indian weights.

One pound troy is equal to taels 9 $\frac{833}{1000}$ nearly.

One pound avoirdupois is equal to three-fourths of a catty, or 12 taels.

One hundred-weight is equal to 84 catties.

One ton is equal to 16 piculs 80 catties.

One ton is equal to 27.222 Indian maunds, or nearly 27 $\frac{1}{4}$ maunds.

One Indian maund is 82 $\frac{1}{2}$ lbs. avoirdupois exactly.

One maund or 100 lbs. troy is equal to 993.446 taels.

One tael is equal to 3.221 tolaha.

One Bengal factory maund is equal to 56 catties.

One Bengal bazar maund is equal to 61.6 catties.

To convert taels into pounds troy.—Divide by ten, and to the quotient add two-thirds of one per cent.

To convert piculs into pounds avoirdupois.—Add a third to the number of catties.

To convert pounds avoirdupois into piculs.—Subtract a quarter, and divide by 100.

To convert hundred-weights into piculs.—Multiply by 84 catties, and divide by 100.

To convert Bengal factory maunds into piculs.—Multiply by 56, and divide by 100.

To convert piculs into hundred-weights.—Multiply by 100, and divide by 84; or if minute exactness is not required, add one-fifth, and from the result deduct 8 per mil.

To convert piculs into Bengal factory maunds.—Multiply by 100, and divide by 56; or if minute accuracy is not required, add three-quarters, and two per cent. upon the result.

To convert Bengal bazar maunds into piculs.—Multiply by 616, and divide by 1000.

To convert piculs into Bengal bazar maunds.—Multiply by 1000 and divide by 616; or if minute accuracy is not required, add 62 $\frac{1}{2}$ per cent.

To convert Indian weights into avoirdupois weight.—1. Multiply the weight in seers by 72, and divide by 35; the result will be the weight in pounds avoirdupois. Or 2, multiply the weight in maunds by 36, and divide by 49; the result will be the weight in pounds avoirdupois.

To convert avoirdupois weight into Indian weights.—1. Multiply the weight in pounds avoirdupois by 35, and divide by 72; the result will be the weight in seers. Or 2, multiply the weight in cwts. by 49, and divide by 36; the result will be the weight in maunds.

MEASURING ROD.

000	005	085	090	095	100	105	110	115	120
1000	1012	1216	1230	1245	1259	1274	1288	1303	1318
1002	014	219	233	248	262	276	291	306	321
1005	016	222	236	250	265	279	294	309	324
1007	019	225	239	253	268	282	297	312	327
1009	021	227	242	256	271	285	300	315	330
125	130	210	215	220	225	230	235	240	245
1334	1349	1622	1641	1660	1679	1698	1718	1738	1758
1337	352	626	644	663	683	702	722	742	762
1340	355	629	648	667	687	706	726	746	766
1343	358	633	652	671	690	710	730	750	770
1346	361	637	656	675	694	714	734	754	774
250	255	335	340	345	350	355	360	365	370
1778	1799	2163	2188	2213	2239	2265	2291	2317	2344
1782	803	168	193	218	244	270	296	323	350
1786	807	173	198	223	249	275	301	328	355
1791	811	178	203	228	254	280	307	333	360
1795	816	183	208	234	259	286	312	339	366
375	380	460	465	470	475	480	485	490	495
2371	2399	2884	2917	2951	2985	3020	3055	3090	3126
2377	404	891	924	958	2992	027	062	097	133
2382	410	897	931	965	2999	034	069	105	141
2388	415	904	937	972	3006	041	076	112	148
2393	421	911	944	979	3013	048	083	119	155
500	505	585	590	595	600	605	610	615	620
3162	3199	3846	3890	3936	3981	4027	4074	4121	4169
3170	206	855	899	945	3990	036	083	130	178
3177	214	864	908	954	3999	046	093	140	188
3184	221	873	917	963	4009	055	102	150	198
3192	228	882	926	972	4018	064	111	159	207
625	630	710	715	720	625	730	735	740	745
4217	4266	5129	5188	5248	5309	5370	5433	5495	5559
4227	276	140	200	260	321	383	445	508	572
4236	285	152	212	272	333	395	458	521	585
4246	295	164	224	284	346	408	470	534	598
4256	305	176	236	297	358	420	483	546	610
750	755	835	840	845	850	855	860	865	870
5623	5689	7839	7918	6998	7079	7161	7244	7328	7413
5636	702	855	934	7015	096	178	261	345	430
5649	715	871	950	7031	112	194	278	362	447
5662	728	887	966	7047	129	211	295	379	464
5675	741	902	982	7063	145	228	311	396	482
875	880	960	965	970	975	980	985	990	995
7499	7586	9120	9226	9332	9441	9550	9661	9772	9886
7516	603	141	247	354	462	572	683	795	908
7534	621	162	268	376	484	594	705	817	931
7551	638	183	290	397	506	616	727	840	954
7568	656	204	311	419	528	638	750	863	977

Table 20.—Chinese, Indian, and English large Weight compared.

A picul is equal to	A cwt. is equal to				
5.333	4.480	Madras maunds of 8 vis, or.....		lbs. dec.	25.000
4.761	4.000	Bombay maunds of 40 Bombay seers, or			28.000
4.535	3.809	do. 42 do.			29.400
3.571	3.000	Surat maunds of 40 Surat seers, or			37.333
3.484	2.926	do.* 41 do.			38.266
3.401	2.857	do.† 42 do.			39.199
3.303	2.774	do. 43‡ do.			40.366
3.246	2.727	do. 44 do.			41.066
1.785	1.500	Bengal factory maunds of 40 seers, or.....			74.666
1.623	1.353	Bengal basar do. 40			82.133
<hr/>					
A Madras candy of 20 maunds is.....			500	4.464	3 75
A Bombay candy of 20			560	5.000	4 90
do. 21			588	5.250	4 41
do. 22			616	5.500	4 62
A Surat candy of 20			746‡	6.666	5 60
do.† 21			784	7.000	5 88
do. 22			821‡	7.333	6 16

* By this weight China sugar is sold at Bombay.

† By this weight Malwa opium is sold at Damaun and in the interior of India.

‡ By this weight cotton is sold at Bombay.

Section 5.

MEASUREMENT OF CARGO.

The logarithmic tonnage rod or callipers which accompanies this table is a very ingenious instrument, invented by Mr. Stansbury, an American merchant, formerly of Canton, and is graduated, not by feet and inches, but by the dimensions corresponding to the logarithms thereof. These logarithms being ascertained by measurement, and added up, the feet and decimal parts corresponding to the sum of them are ascertained by Table 21, on the opposite leaf.

On the rod is placed a small auxiliary table, for the purpose of ascertaining the amount of freight corresponding to given logarithms, at various rates per ton.

Measure the package, the cubic contents of which are required, noting the number of the division each dimension extends to; add the three numbers together; point off and reserve the thousands, or fourth left-hand figures, if there be any; then find, on the upper line of the table, the other three figures, or the next less figures marked there (for they are marked only by fives); immediately under them are five lines of four figures each, one of which lines will correspond to the exact number. Thus, under No. 740 are these five lines of figures, 5495, 5508, 5521, 5534, and 5546, which mean that the figures corresponding to No. 740 are 5495;—to No. 741, 5508;—to No. 742, 5521; to No. 743, 5534;—and to No. 744, 5546; which will be easily understood by inspection and a little practice.

Those figures, when found, will be the cubic feet and decimal parts of a cubic foot contained in the package or thing measured, as many figures to be estimated whole numbers as there were thousands pointed off and reserved; the rest of them are decimals. When the sum of the three dimensions is less than 1000, and consequently has no fourth left-hand figure, all the figures taken out of the table are decimals. Thus, suppose three dimensions added together make 1,740; then the figures answering to No. 740 are to be written 5.495, or $5\frac{495}{1000}$ feet: but if they make 2,740, then the figures are to be written as to whole numbers and two decimals, 54.95, or $54\frac{95}{100}$ feet. Or, if the numbers are simply 740, not amounting to 1000, as there is no fourth left-hand figure, they are of course all decimals, and the contents will be .5495, or $\frac{5495}{10000}$ of a foot.

Table 22.—Average Weights and Measurements of common Goods.

ARTICLES.	Net Weight	Measurement.	Packages in a ton of 40 feet	Packages in a ton of 50 feet
		<i>cubic feet</i>		
TEAS.—Congou, chests	85 lbs.	4.5	9	11
" half-chests	40 "	2.5	16	20
Souchong, chests	80 "	4.5	9	11
" half-chests	37 "	2.6	16	20
Flowerly Pekoe, chests	65 "	4.5	9	11
Orange, half-chests	50 "	2.5	16	20
Powchong, "	30 "	2.2	18	23
Ningyong & Oolong, "	36 "	2.5	16	20
Hyson, chests	70 "	4.3	9.3	11.6
" half-chests	46 "	3.1	13	16
Young Hyson, "	55 "			
Gunpowder, "	58 "			
Imperial, "	53 "			
Twankay, "	49 "			
Hyson Skin, chests	68 "	4.2	9½	12
Raw Silk, bale	80 catties	6.0	6½	8½
" case	50 lbs.	2.6	15.4	19½
Cassia in mats, bundle	50 catties	4.0	10	12½
" cases, cases	50 "	5.8	7	8½
Rhubarb, "	50 "	3.6	11	14
Cassia Buds, "	1 picul	5.2	7.7	9.6
Star Aniseed, "	1 "	8.5	4.7	5.9
Camphor, "	1 "	4.1	9.7	12.2
Cassia Oil, "	½ "	2.8	14.3	17.9
Anise, "	½ "	2.5	16	20
Vermilion, "	½ "	1.2	33	41.7
Split Rattana, bundle	½ "	3.6	11	14
Preserves, cases	6 jars	1.83	22	27.3
Fire Crackers, "	40 packgs.	0.42	95	120
Rattan Chairs, bundle	2 chairs	12.75	3	3.6
Matting, size ½, roll	40 yards	3.6	11	14
" " ¾, "	"	4.8	8½	10.4
" " 1, "	"	6.0	6½	8½
" " 1½, "	"	7.2	5.6	7

Section 6.

BULLION OPERATIONS.

In the absence of authentic record, it were useless to hazard any precise statement as to the extent to which China exports or imports the precious metals. It does not, however, admit of doubt, that the operations in these have of late years largely increased, and will in years to come, with the fuller development of trade, be on a yet larger scale. We may, therefore, be justified in looking at some of the principal operations usually engaged in, and first as to those arising from the *import* of the precious metals.

I.—BAR SILVER.

This is largely imported from England, France, and California, and should as far as possible be of 17 dwts. betterness, or of the corresponding French fineness of 995.833 milliemes. For any excess of betterness the Chinese are tardy to make allowance, while on the other hand the slightest inferiority is made by them matter of undue deduction. Throughout China, bar silver is bought and sold at a fluctuating percental premium; but in Hongkong, this premium is on every 717 Canton taels weight, payable in chopped dollars; while in Shanghai, it takes the shape of a fluctuating number of Shanghai taels weight of silver of Shanghai touch for every 100 Canton taels weight of silver of Canton touch. In calculating the outturn, therefore, of any shipment, say from England, regard has to be had to these differences between the ports of Hongkong and Shanghai, besides that in the one place the chopped dollar, and in the other the tael, is the recognised standard of value. An example in the case of either port will best illustrate the matter:—

1.—Hongkong.

Assume Bar Silver 17 dwts. better,—

Bought in London at 5/1 per oz. standard.

Sold in Hongkong at 7 per cent premium.

Shipping and insurance charges $3\frac{1}{2}$ per cent.

To find the outturn per Hongkong dollar?

	?	=	1	Hongkong dollar.
Hongkong Dollars, .	1070	=	717	
		=	25.09 charges	} 742.09 Canton taels.
Canton tael,	1	=	24.16	dwts. troy.
Dwts. troy,	222	=	239	" " standard.
standard,	20	=	61	pence.
$742.09 \times 24.16 \times 239 \times 61$		=	55.02	pence.
$1070 \times 222 \times 20$		=	4/7.02d.	

The shipment would thus give an outturn per dollar of 4/7.02.

2.—Shanghai.

Assume data as before, with the exception that the bar silver is sold in Shanghai, and say at 10 per cent premium; shipping and insurance charges 4 per cent. To find the outturn per Shanghai tael?

	?	=	1	Shanghai tael.
Shanghai taels, . . .	110	=	100	Canton taels.
Canton tael,	1	=	24.16	dwt. troy.
Dwt. troy, 17 better, . . .	222	=	239	" " standard.
	20	=	61	pence.
$\frac{104 \times 24.16 \times 239 \times 61}{110 \times 222 \times 20}$				= 75.00 pence.

The outturn accordingly is 6/3 per tael.

No allowance, it will be observed, is made for interest of money during the time occupied by above operations, nor will such be made account of in any of our examples. The application is obviously a very simple one, and no two houses in all probability will put the same value on money.

II.—MEXICAN DOLLARS.

These in an unchopped state are supplied to China from England and California,—mainly the former. In Hongkong, they carry a fluctuating premium over chopped dollars; while in Shanghai, they are bought and sold at a fluctuating number of Shanghai taels weight of Shanghai sycee per \$100 counted out. Our examples will again embrace either port.

Assume dollars bought in London at 5/1 per oz., sold in Hongkong at 5 per cent premium; shipping and insurance charges 3½ per cent. To find the outturn in Hongkong per dollar?

	?	=	1	Hongkong chopped dollar.
Hongkong chopped dollars, . . .	105	=	103.5	unchopped dollars and charges.
Unchopped dollars,	1	=	17.33	dwt. troy weight.
Dwt. troy weight,	20	=	61	pence.
$\frac{103.5 \times 17.33 \times 61}{105 \times 20}$				= 52.10 pence.

The outturn therefore is 4/4. 1½ per dollar, laid down in Hongkong.

In Shanghai again,—cost price in London as before; charges 4 per cent; and selling price at the rate of 80 taels per 100 clean dollars, the calculation would stand thus:—

	?	=	1	Shanghai tael.
Shanghai taels,	80	=	104	unchopped dollars and charges.
Unchopped dollars,	1	=	17.33	dwt. troy weight.
Dwt. troy weight,	20	=	61	pence.
$\frac{104 \times 17.33 \times 61}{20 \times 80}$				= 68.71 pence.

Thus obtaining by the shipment an equivalent per Shanghai tael of 5/10. 1½. 36.

Of late years it has become a frequent operation to ship unchopped dollars from Hongkong and other southern ports to Shanghai. The objects are varied, and need not here be entered on. We append, however, an example of the operation.

Assume unchopped dollars to be selling in Hongkong at 6½ premium, and in Shanghai at 80 taels per \$100, charges are ½ per cent. To find the discount established thereby in Hongkong or Shanghai:—

	₹	=	100 Hongkong dollars.
Hongkong dollars and charges,	107.29	=	100 unchopped dollars.
Unchopped dollars,	100	=	80 Shanghai taels.
$80 \times 100 \times 100$			
107.29×100		=	74.55

or a discount on Shanghai of 25.45 per cent.

The reverse operation (that of shipment from Shanghai to Hongkong), though rare, is not at times by any means impracticable. The data will stand as before, and the formula be,—

	₹	=	100 Hongkong dollars.
Hongkong dollars, .	106.5	=	106.75 ($\frac{1}{2}$ per cent charges) unchopped dollars
Unchopped dollars, .	100	=	80 Shanghai taels.
106.75×80			
106.5		=	75.68

or a discount in Shanghai or Hongkong of 24.32 per cent.

It will, however, be observed that, contrary to what we have often heard alleged as the general idea, we view in these operations between Hongkong and Shanghai, or *vice versa*, the 100 Hongkong dollars as the fixed par of exchange, the Shanghai tael bearing a fluctuating value thereto.

We now proceed to view the operations incident to China as an *exporter*. In this capacity, China ships *sycee* silver and gold leaf and bars largely to India.

1.—SYCEE SILVER.

As already stated in the progress of this work, *sycee* silver, in ingots of convenient size and weight, constitutes the main medium of exchange in the interior of China, and along the seaboard is only very slowly being superseded by the coined Mexican dollar. It is to be regretted that no uniform degree of fineness, as over the entire kingdom of China, can be imputed to this *sycee*. Every district, indeed, appears to have its own standard of quality; and though Canton *sycee* has seemed justly to gain a prescriptive title to being deemed of the first quality, still we have known Shanghai *sycee* over and again, at the Indian mints, to outstrip its southern rival. There can, however, be no doubt that the former is degenerating far more rapidly than the latter. It would almost appear, in fact, as if, with the enlargement of the Chinaman's opportunities of dealing with foreigners, his proneness to deception gradually grows, and it is on his *sycee* silver that he earliest has exercised his ingenuity. Few would imagine that, much as we hear of "100 touch *sycee*," there is in reality no such thing, the very finest made averaging at most 98.5 touch, or, as closely as may be, 14½ dwts. English betterness. Should an occasional shoe be found over this, it is not owing to any voluntary intention that it shall be so, but rather to the imperfections and rudeness of the Chinese mode of assay. In practice, it will be found not an unsafe plan to average the touch of all *sycee* whatever at about 98, securing at the Indian mints about Rs. 104½ per 100 tolahs. This outturn being a fixed quantity, no diminution on it can, under Act XIX. of 1861 of the Supreme Council of India, meanwhile take place, and the exporter knows accordingly that he cannot in selling do *worse* than it. Should the bazaar price be in excess of the mint outturn, the greater, of course, is it to the Chinese exporter's advantage; but

there are many drawbacks militating against the sale, as a general rule, of sycee in the Indian bazaar, unless indeed its touch can be guaranteed as equal to the average which we have above indicated. As drawn, however, from bazaar prices, the arbitration between China and India is simple :—

Assume Sycee bought in Hongkong at 5 per cent premium.

Sold in Indian bazaar at Rs. 105 per 100 tolahe.

Charges, say 2 per cent.

To find the equivalent given per 100 Hongkong dollars.

Hongkong dollars and charges,	1091.4	=	100	Hongkong dollars.
Canton taels,	1	=	717	Canton taels.
Tolas,	100	=	3.22	Tolas.
		=	105	Rupess.
$717 \times 3.22 \times 105$				
1091.4×1				
= 222.11 Rupess.				

The outturn consequently is Rs. 222.1.9.12 per 100 Hongkong dollars.

Or again in Shanghai,—

Assume the sycee bought there at 9 per cent premium.

Sold in Indian bazaar at Rs. 105 per 100 tolahe. Charges say 3 per cent.

Shanghai taels and charges,	112.27	=	100	Shanghai taels.
Canton taels,	1	=	100	Canton taels.
Tolas,	100	=	3.22	Tolas.
		=	105	Rupess.
$105 \times 3.22 \times 100$				
112.27×1				
= 302.15 Rupess.				

Giving thus an outturn of Rs. 301.2.4.8 per 100 Shanghai taels.

Ere leaving the subject of silver, it may be useful to state the following as the literally exact outturn at the Indian mints of a few of the various qualities of bar silver :—

English Betterness.	French Fineness.	Indian Touch.	Outturn per 100 Tolahe.		
			Rs.	A.	P.
13	979.166	97.75	104	6	5
13½	981.250	98.	104	10	8
14	983.333	98.25	104	15	0
14½	985.416	98.50	105	8	3
15	987.500	98.75	105	7	6
15½	989.583	98.75	105	7	6
16	991.666	99.	105	11	10
16½	993.750	99.25	106	0	1
17	995.833	99.50	106	4	4
17½	997.916	99.75	106	8	7
17¾	998.958	99.75	106	8	7

There is, of course, no such English betterness as 17¾, but we state it so as the closest approximation to the fine French silver of 998.958 milliemmes fine, or, as it is expressed, 999. *Raids* fineness; and it will be seen that, at the Indian mints, this fetches no higher outturn than the inferior quality of 17½ English betterness. Similarly, 15 and 15½ English betterness yields one and the same outturn. Did our limits permit

of an extension of the table, a similar loss would be observed in the Indian mint system at an interval of every three English pennyweights of half a pennyweight betterness or worseness, as the case may be, to the tenderer. The reason will be at once apparent, on noticing above that the Indian mints recognise no touch, save in *even quarters* of 100. The difference is simply plundered from the tenderer, under what is, in mint phrase, termed "assay benefit," and a blot it is on the whole Indian minting system.

We do not, in the above table, profess to have quoted the decimals of *pies* in the outturn. They are accurate, however, to a *pie*, and, giving above data, it may suffice to state farther generally (under reservation of the peculiarity already noticed at the interval of every three English pennyweights) that the outturn improves or deteriorates, as the case may be, by a difference of eight annas six *pies* and a half for every English pennyweight. The chief value of knowing the mint outturn will, of course, as already indicated, always be as enabling the shipper to know the *worst* he can do. Whether tendered to the mint or sold in the open bazaar, the silver costs in shipment the same expense; and if he can do better in the one way than the other, the more favourable mode will naturally be chosen. It remains, however, to be added, that, as against the above mint difference of 8 annas 6½ *pies* per pennyweight, the bazaar difference is only four, and in fact in some cases even only three annas per pennyweight, reckoning downwards from 17½ betterness, for which latter the market quotation is always understood to be. With *sycee* silver again, it may be found difficult to sell at all in the bazaar, should the touch prove unusually inferior, and, even if not so, the exactions made for any touch short of 98 are very arbitrary.

2.—GOLD.

This, whether in leaf or bar, is sold in Hongkong at a fluctuating number of dollars and cents per one Canton tael weight; in Shanghai, at a fluctuating number of Shanghai taels, mace, and candareen of Shanghai *sycee* per 10 taels Shanghai weight of gold. A difference, however, has here to be observed between the tael weight of Canton and that of Shanghai, the former weighing 579.84 English troy grains, while, to be quite safe, the latter may be taken as roundly only 566 English grains troy. Observing this difference, the arbitration between China and India from gold is simple. We adduce an example as from either port of Hongkong and Shanghai:—

I.—Hongkong.

Assume gold bought at \$22 per Canton tael weight, sold in India at Rs. 16 per tola, charges 2 per cent.

To find the equivalent per 100 Hongkong dollars ?

			100	Hongkong dollars.
Hongkong dollars and charges,	22.44	=	1	Canton tael.
Canton tael,	1	=	579.84	English grains troy.
English grains troy,	180	=	1	Tola.
Tola,	1	=	16	Rupees.
<u>579.84 × 16 × 100</u>		=	229.68	Rupees.
<u>180 × 22.44</u>				

or Rupees 229.10.10.56 per 100 Hongkong dollars.

II.—*Shanghai.*

Assume gold bought at Tls. 160 per 10 taels Shanghai weight, sold in India at Rs. 16 per tola, charges 3 per cent.

To find the equivalent per 100 Shanghai taels?

Shanghai taels and charges,	164.8	=	100	Shanghai tael.
Shanghai tael weight,	1	=	10	Shanghai taels weight.
English grains troy,	180	=	566	English grains troy.
Tola,	1	=	1	Tola.
		=	16	Rupees.
$100 \times 10 \times 566 \times 16$		=	305.28	Rupees.
$164.8 \times 1 \times 180$				

or Rupees 305.4.5.76 per 100 Shanghai taels.

In India, sales of gold usually take place in the bazaar, with the exception, perhaps, of Calcutta, where to some extent it is tendered to the mint for coinage into gold mohurs. Considerable fastidiousness is shown with unknown "chops," and it is usual for the exporter to take a guarantee for quality proving up to the professed touch.

It will be evident to our readers, that in these cursory remarks and illustrations we have but skimmed the surface of the operations to which bullion gives rise in China. We have entered indeed on none of the many and valuable indirect arbitrations of exchange effected by its means, but such were beyond the scope of this work, and must be learned by daily practice. On the other hand, we have preferred to mere tabular results (the form in which these calculations usually appear), to give the formulæ by which each individual may reach them for himself. Perhaps no two houses in China will be found to coincide to a decimal in the charges of shipping bullion between England and China, or China and India. We do not say, indeed, that the charges we have assumed on the operations given are even those to which in practice we are ourselves accustomed. The formulæ may, however, be adopted to any scale of charge, and each house knows what its own scale is. The practical dealer does not need to be reminded, that the formulæ may be greatly simplified by reducing both sides of the equation to their lowest terms.

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APPENDIX.

SAILING DIRECTIONS FOR THE COAST OF CHINA,
THE JAPANESE ISLANDS, AND THE
GULF OF SIAM.

In this work the Bearings are all Magnetic,
except where marked as True.

The Distances are expressed in Sea Miles of
60 to a Degree of Latitude.

A Cable's Length is assumed to be equal to
100 Fathoms.

APPENDIX.

SAILING DIRECTIONS FOR THE COAST OF CHINA.

CHAPTER I.

TYPHOONGS; CURRENTS IN THE CHINA SEA AND ON THE EAST COAST OF CHINA; AND REMARKS ON MAKING PASSAGES.

Typhoongs.—These dangerous tempests derive their name from two Chinese words, *ta* 大 great, and *fung* 風 wind, which are applied by the natives, like our words *storm* or *gale*, to any unusual wind, and do not specifically mean rotatory tempests. They occur in the northern part of the China Sea, near Formosa, the Bashi islands, and the north end of Luzon; also to the eastward of those islands, and between Formosa and the Japan archipelago; extending into the Formosa channel, and down the coast beyond Amoy, Hong-kong, and even to the island of Hainan, where they are expected earlier in the season than off Fuhkien. Their range is from the coasts of Hainan to the Bonin islands and north as far as Corea, travelling northerly as the season advances: the high mountain chain which runs nearly the whole length of Formosa, and rises from 5,000 to 10,000 feet above the sea, probably diverts, not only their curve, but their direction.

These tempests are liable to happen in both monsoons; but they are usually less severe in the China Sea, if they occur in May, November, or December, although in the vicinity of Formosa and the Bashi islands there are sometimes furious gusts in November. From December to May they seldom or never happen. Of late years, those that have been experienced in June and July were the most violent; many vessels have been dismasted and sustained other damage by them. The months of August, September, and October are also subject to these tempests. The September equinox is a very precarious period,

particularly if the change or perigee of the moon coincide with the equinox. When this was the case, typhoons happened several years at the equinox in September, on the coast of China, and many ships were dismasted on the 21st or 22d of that month.

The coming of these tempests cannot be prognosticated with certainty, for they frequently commence without giving much indication of their approach. The clouds having a red aspect is not a certain warning of the approach of a typhoon; for, at the rising, but more particularly at the setting of the sun, the clouds, especially those opposite to it in settled weather, are sometimes tinged with a deep red colour by the reflected light. Neither is an irregular swell a good criterion to judge of their approach; for near the coast of China a cross swell frequently prevails during settled weather. A hazy atmosphere preventing land from being seen at great distances, is no unfavourable sign on the coast of China; for this is generally its state in medium or settled weather. A serene sky, with the horizon remarkably clear, should not be considered an indication of a continuance of favourable weather; for a series of fine weather and calms, favouring an increase of heat above the mean temperature, is likely to be succeeded by a typhoon. When the horizon is very clear in some parts, and the summits of the hills or islands obscured by dense black clouds, there is some irregularity in the atmosphere, and stormy weather may be apprehended; but in reality, typhoons are seldom preceded by any certain sign or indication. Marine barometers seem to afford the best means of anticipating their approach; for, on the south coast of China, there is a greater fall of the mercury than might be expected within the tropics.

Many vessels have been driven from the entrance of Canton river to the Mandarin's Cap, and even to the Taya islands near Hainan, during typhoons; for among the islands, and near this coast, these tempests generally commence between N.W. and North, then veer suddenly to N.E. and East, frequently blowing with inconceivable fury, and raising the sea in turbulent pyramids which impinge violently against each other; the current at such times runs strong to the westward. From eastward, the wind veers to the south-eastward and southward, and then becomes moderate.

It is found that their progress is governed by a general law, and consequently the vortex can be avoided, and the vessel's safety assured by attention to a practical rule, which is this:—Look to the wind's eye,—set its bearing by the compass,—and the 8th point to the *right* thereof, in North latitude, will be the bearing of the centre of the storm. For example, suppose the vessel to be in lat. 18° N., the wind East, and the barometer and sky indicating a coming gale,—then, look at the compass, take the 8th point to the *right* of East, and South is the bearing of the brewing storm, if it be of a revolving type. In this case the vessel will be on the northern edge of the storm-field.

In the northern part of the China Sea, a low barometer for several days previous, an ugly threatening appearance, and heavy swell, will give sufficient warning, and provided it be taken, will enable vessels to get sufficient sea-room to avoid the centre of the storm, or to secure safe anchorage.

Typhoon Harbours.—The following is a list of anchorages on the east coast of China where vessels will lie secure in a typhoon:—Tam-tu island; Mira

bay; Ty-sami inlet (for 12 feet draught;) Namoa island (abreast Stewart's house;) Tongsang harbour; Amoy harbour; Quemoy island; Pescadore islands (Makung harbour;) Chin-chew harbour (within the Boot sand;) Hung-hwa sound; southern entrance to Haitan strait; Pih-quan harbour; Bullock harbour; Kelung harbour (Formosa;) Chusan archipelago (Ting-hai outer and inner harbours, Chinkeamun and Chin-keang harbours, Fisher or Chang-pih island, and Ta-outse on the north-west side of Kintang.)

Currents in South-west Monsoon.—The currents in the China Sea are very changeable, their direction and velocity depending much upon local circumstances. Late in April, or early in May, they generally begin to set to the northward, in the south and middle parts of the sea, and continue to run in a north-easterly direction until September, while the South-west monsoon is strong; but they are not constant in this monsoon, for at times, when the wind is moderate or light, the currents are liable to change and set in various directions. After the strength of the monsoon has abated, there is often little or no current in the open sea, running to the north-eastward; but sometimes its direction is to the southward.

Along the coast of Cochinchina, from Pulo Obi to Cape Padaran, the current sets mostly to the E.N.E., parallel to the shore, from April to the middle of October; and during the same period its direction is generally to the northward along the east coast of the Malay peninsula, from the entrance of Singapore strait to the Gulf of Siam. To the northward of cape Padaran there is but little current in the South-west monsoon, near the Cochinchina coast; for, from thence to the Gulf of Tongking, a small drain is sometimes found setting to the northward, at other times to the southward. When a gale happens to blow out of the latter gulf from the north-west and westward, the current at the same time sets generally to the south-west or southward, in the vicinity of the Paracel islands and reefs, or where these gales are experienced; and this current running obliquely, or contrary to the wind, a turbulent and high sea is thereby produced.

On the south coast of China the current is much governed by the wind; when strong S.W. winds prevail, it runs along shore to the eastward, but seldom strong. Near, and amongst the islands, westward of Macao, there is generally a westerly current, occasioned by the freshes from Canton river, which set in that direction; frequently sweeping along the islands from Macao to St John between W.S.W. and W.N.W., about 1 or 2 knots per hour. This westerly current is, however, not always constant in the South-west monsoon, for it slacks at times; then a weak tide may sometimes be experienced running eastward.

On the coasts of Luzon and Palawan, the current generally sets northward in the South-west monsoon, but frequently there is no current, and near these coasts it seldom runs strong. Near the Bashi islands, it sometimes sets to the eastward when strong westerly winds prevail; but generally strong to the northward, or between N.N.W. and N.E.

The strength of the current on the eastern coast of China increases with the freshness and duration of the monsoon, varying from one to as much as 3 and even 4 knots per hour; and this requires to be especially guarded against when

hove-to off a port or running for one in thick weather. Thus a number of vessels in the South-west monsoon have run into Hu-i-tau bay instead of Amoy; and again in the North-east monsoon have picked themselves up off Red bay instead of Chapel island. The current will slack a little at particular times of tide, but it is seldom found to run to the south in the southerly monsoon, or to the north in the other. At the Pescadore islands, in the month of August, a current is sometimes experienced of 4 knots per hour, running to the north, whilst with the ebb it slackens for two or three hours, but seldom ceases entirely.

Currents in North-east Monsoon.—The current in the China Sea, during the North-east monsoon, generally runs to the south-westward, with a velocity depending on the strength of the wind. When the force of the monsoon is abated, or during moderate breezes, there is often little or no current.

In the western parts of the China Sea, along the coasts of CochinChina and the Malay peninsula, the current generally begins to run to the southward about the middle of October (sometimes sooner on the former coast), and continues until April. During the month of March, its direction is constantly to the southward about Pulo Aor, with light easterly winds and calms at times. On the coast of CochinChina, and adjacent to Hainan island, a current, varying from South to S.W., commences sometimes about the middle of September; near the land, from lat. 15° N. to 11° or $11\frac{1}{2}^{\circ}$ N., it increases in strength; but its rate decreases in proportion as it flows southward. During the prevalence of the North-east monsoon, from about lat. 14° N. to Cape Padaran, the current near the coast frequently runs 40 or 50, and sometimes 60 miles to the southward in 24 hours; the rate, however, is variable, and it is only in the limits above mentioned that it is occasionally so strong, for its strength abates at Cape Padaran, and runs with less velocity to the S.W. towards the entrance of the Gulf of Siam.

On the south coast of China, the current during the North-east monsoon runs almost constantly to the W.S.W., nearly parallel to the land; and sometimes with much rapidity, when a typhoon or a storm happens. At the distance of 20 or 30 leagues from the coast, it seldom runs so strong as near it; and in 30 or 40 fathoms soundings there is much less current than in shoal water, near the shore and amongst the islands. The westerly current sometimes slacks, and, contiguous to the land, is succeeded by a kind of tide.

Between the island of Formosa and the China coast the current runs to the southward during the North-east monsoon. When strong N.E. winds prevail, its direction is generally to the S.W. or southward, between the south end of Formosa and the north end of Luzon; but here, in light variable winds, it often sets to the northward. On the west coast of Luzon the current is changeable, sometimes setting southward along the coast, at other times northward. On the coast of Palawan it is also mutable, governed by the prevailing winds, but seldom runs strong in any direction, unless impelled by severe gales. To the eastward of Formosa, about Botel-tobago sima, it frequently runs strong to the northward and north-eastward, so early as the 1st of March; and, although changeable at times, it sets mostly in that direction during the South-west monsoon; and in the opposite direction during the North-east monsoon.

Tides.—The tidal wave strikes upon the eastern coast of China, from Hongkong to the Yang-tse-kiang, nearly at the same period; it being high water on full and change days, in the neighbourhood of the Lema islands, at about 8h. 30m., and at the outer islands of the Chusan archipelago it is an hour later. The rise and fall, however, increases considerably to the northward; probably owing to the obstruction which the wave receives from the Philippine islands; and in some instances the diurnal inequality is great.

After passing Breaker point, the coast trends more northerly, and the flood stream will be found useful to vessels bound to the northward. The rise and fall increases, passing from 7 feet at Namoa island to 12 feet at Tongsang, and 20 feet at Amoy. Between Amoy and the river Min, the rise of the tide varies from 16 to 18 feet at the springs, and the flood enters on the north as well as on the south side of Hai-tan strait.

To the northward of the Min, the flood sets more determinately to the north; it seldom, however, (unless off headlands or in narrow channels) overcomes the current caused by the monsoon, but has the effect of slackening it.

Passage East of Formosa.—A vessel bound from Hongkong to Ningpo, or Shanghai, or even to Fuchau, during the North-east monsoon, should be in good condition for contending with rough weather and for carrying sail. The best plan appears to be, to work along the coast as far as Breaker point, and then stretch across to the south end of Formosa, and work up eastward of that island. By remaining in with the coast of China, she will have the advantages of the land wind at night, of smoother water, and the ebb-tide out of the deep bays, which will generally be under her lee on the starboard tack; and in the event of its blowing too hard to make weigh, there are numerous convenient anchorages. It will be prudent to keep within 10 miles of the coast, to avoid being swept to the southward whilst standing off the land; but as this cannot be done at night without risk, a vessel should, if possible, anchor in the evening, and weigh in the middle watch, when the wind, generally coming more off the land, will enable her to make a good board on the off-shore tack. By passing eastward of Formosa, also, a heavy short sea in the Formosa channel will be avoided, as well as the constant set to the southward during the season.

After rounding the south end of Formosa, off which there is often a troublesome sea, caused in a measure by the strong current running through the strait, a vessel should make short tacks, if requisite, to keep within the influence of the Kuro-siwo or Japan stream, which has sometimes been found running to the northward at the rate of 30 or 40 miles per day. There are no harbours on the east coast of Formosa, except Sú-au bay, towards the north end of the island, and deep water will be found close to the land.

Having weathered the north end of Formosa, it will be still advisable to keep to the eastward, and not approach the continent until the parallel of lat. $30\frac{1}{2}^{\circ}$ N. is gained. Should, however, a vessel be driven to the westward, she may always calculate on smooth water, and be able to tide it through the southern part of the Chusan archipelago; and if disabled and in want of spars, she can remain at the southern side of Duffield Pass, and supply herself from the wood junks.

CHAPTER II.

COAST NEAR HAINAN, AND APPROACHES TO CANTON RIVER, INCLUDING HONGKONG.

VARIATION 0° 30' EAST IN 1861.

THE surveys of the coast of China and adjacent islands have been made, with trifling exceptions, by the ships of H.B.M.'s navy, which have explored nearly all the shores and harbours from Hongkong to Hakodadi, and their charts and plans serve as the best guides to the navigator throughout this long stretch of coast. The space west of Hongkong, as far as Hainan and the coasts of Annam, have never been regularly surveyed; but measures are now in progress to supply the deficiency; one of the ports lately opened to foreign commerce, Kiung-chau 瓊州府 lies on the northern side of Hainan, and that island will doubtless develop resources sufficient to invite vessels to its seaport of 海口 Hai-kau or Huihau. In lieu of general observations on this part of the coast of China, the following remarks by Mr Kerr, master of H.M.S. *Columbus* in 1850, are given as the best guide yet available through the passages to the straits of Hainan and beyond into the gulf of Tonquin.

Nau-chau.—From Tai-fang-kioh 大放角 (the outer island off Tien-pak) to Nau-chau, is S.W. by W. 40 miles. Nau-chau is about 300 feet high, and well cultivated: it is 9 miles long and 3 broad. *Shoals off the Coast.*—Strangers should not approach the eastern point of Nau-chau by a course more southerly than W., or W. by S., to avoid the sandbanks on the northern shore. *Shoal off N. Point.*—The north point of the island is W. by N., five miles, from the eastern, the coast between being full of rocks. Off this point is a dangerous horn of sand; it would therefore be advisable for strangers to get a pilot before proceeding further. This can be done by stopping a fishing-boat, or by anchoring and sending to the towu. Low water would be the best time to enter, as then the banks are visible. *The town* is situated on the western point of the island, which is S.W. by S., six miles from the northern point. *Anchorage.*—Very snug anchorage will be found off the town in a small bay. The bottom is very irregular, having 6.16, 17.5, and so on; and close to the point 30 fathoms, over which you are obliged to pass, to avoid the sandbanks

which border the anchorage on the west side. The *Columbine* anchored with South Fort N. 57° E., South Point of bay S. 27° E. Rise of tide nine or ten feet.

Passage to Southward has three dangers: these are—the Bar, the Flats, and the Narrows. *Bar*.—SW. by S., $2\frac{1}{2}$ miles from the West point of Nau-chau, the passage is very narrow (not more than 4 or 5 cables), and having only $2\frac{1}{2}$ fathoms at low water. *Flats*.—14 miles south from the same point is an extensive flat, with only 9 or 10 feet on it at low water. It is from 2 to 3 miles broad, frequently impassable from the heavy sea which runs on it when the wind is strong, it being exposed to the whole drift of the N.E. monsoon. Here the *Fury* touched in 3 fathoms, only drawing 14 feet 7 inches. *Narrows*.—S. $\frac{1}{2}$ W. 17 miles from the above point, the channel is again very narrow, but with not less than $3\frac{1}{2}$ fathoms. This channel is not dangerous, as the water is always smooth, being in the immediate vicinity of the extensive reefs with which the coast in this part is bounded. *Anchorage*.—Between the Narrows and the Bar, the *Columbine* and *Fury* remained at anchor two nights after unsuccessful attempts to cross the flats. From the Narrows, the channel is wide and free from danger. *Coast*.—The coast from Nau-chau to Hongham is sandhills, with a well wooded country three or four miles inland. W. by S. from the flats is a small bay and town, the only one visible.

Hongham.—S.S.W. 25 miles from Nauchau is Hongham, a small village three miles west from the S.E. point of the peninsula of Luichau. Some junks were at anchor in the bay, but it must be exposed to the N.E. winds.

Kiung-chau fu, Hoi-hau Bay.—S.W. $\frac{1}{2}$ W., 19 miles from Hongham is Hoi-hau bay (formed by the estuary of two small rivers,) on which is situated Kiung-chau fu, the capital of Hainan and its dependencies. *Anchorage*.—The bay and anchorage is protected on the N.E. side by a sandbank at the mouth of the above river. It is moderately well sheltered, being only 16 miles from the peninsula of Luichau. The *Columbine*, *Fury*, and *Phlegethon* rode out a heavy gale from N.E. by N. without any danger. The holding-ground is good. Bearings from anchorage as follows:—Pagoda in the town S. 55° E.; two remarkable hummocks (by which the bay will be recognized) S. 42° W.; and a cone-like rock on the sand-hills at west extreme of bay, W. $\frac{1}{4}$ S.

Cammee Cape.—From Hoi-hau anchorage to Cammee Cape, the S.W. point of the Peninsula, the course is N. 70° W. 30 miles, without any dangers. Off this point, *Columbine* anchored in 12 fathoms, point bearing N.E. by N. 4 miles. The pilots said there were rocks and a sandspit off the point. From this the coast extends to N. by W. as far as we saw it (about 30 or 40 miles.)

Hoo-sheak.—25 miles from the point is Hoo-sheak hill (easily recognized being alone;) to the northward of this is a point with rocks off it. Pilots advised us to go no nearer than 6 fathoms.

Cha-yung Island.—N. 50° W. 48.5 from Cammee cape, is Cha-yung island. It is four or five miles long, and about 500 feet high; it has no anchorage, but a small town in a valley in the centre of the island.

Gui-e-chow Island.—N. 66° W. 15 from Cha-yung is Gui-e-chow; it is

about 7 miles from E. to W. and 400 feet high, the western point being perpendicular. There is an excellent harbour on the southern side; it has a small islet in the centre, but is otherwise clear, sheltered from all points, except from about S.S.E. to E.S.E. *Columbins* anchored with the islet on with E. point of harbour E.S.E., and the W. point of harbour (the perpendicular head as above) S. $\frac{1}{2}$ W. As marked in the charts, there are two islands in this quarter, but Gui-e-chow is the northern one. Ciu-muci-shan appears to be misnamed.

Pak-loong Cape.—N. 51° W. 58 miles from the point of Gui-e-chow is Pak-loong Cape (this is the Pelung cape of the charts,) the east point of a bay in which is situated the town and harbour of Tukshan. *Pak-loong-mi.*—S. 5° W. 8 miles from the point is Pak-loong-mi, a rock awash at high water. This rock makes the bay dangerous to approach during the night, as it is so far off shore. *Pak-loong Anchorage.*—*Columbins* and *Fury* anchored outside the shoals, with the Cape bearing N.E. $\frac{1}{2}$ E. distant 6 miles. *Harbour* is formed by shoals on the east, and a low point on the W.; has 5 fathoms; pilots may be obtained.

Cow-tow-shan Island.—S. 25° W. 40 miles from Pak-loong cape is the S. point of Cow-tow-shan (the Pirate island of the charts;) on this course there are several islands with passages around them, but strangers should take the outside. On the western side of this island is a magnificent bay, many miles in extent, and apparently without any dangers. *Village.*—There are a few miserable huts in the bay, where wood and water may be obtained. *Chae Rocks.*—S. 65° W. 39 miles from Cow-tow-shan, is a large cluster of rocks, some of which are always covered. This course is also not free of islands, *Columbine* passed to southward of Wunlaun, and found a good passage, but only $1\frac{1}{2}$ mile wide. We saw plenty of bullocks (apparently wild) on many of these islands. There is good anchorage near Fung-yung, West 4 or 5 miles from Wunlaun.

Norway Islands.—S.W. 4 or 5 miles from the Chae Rocks is a small group of islands, probably the Norway islands of the chart. *Fie-tze-loong.*—From the Chae Rocks to Oo-nong (a distance of 20 miles) is a most remarkable bay of islets or rocks, of limestone formation (the New Macao of the charts.)

Rock off Oo-nong.—From Chae Rocks to the outside Ninepin off Oo-nong is S. 85° W., 19.5. *Sunken Rock.*—W. by S. $\frac{1}{2}$ mile from this is a dangerous sunken rock, with only 11 feet on it at low water, and 8 fathoms close to it. Near this are Great and Little Oo-nong, small bays with insignificant villages.

Tushan Islands or Pearl Island.—From the rock off Oo-nong to S. point of Tushan islands, is S. 69° W. 12.5. These islands are off the Tonquin river. The entrance is obstructed by a bar, which we crossed at high water in $2\frac{1}{4}$, $2\frac{1}{2}$, and 3; inside the bar the water deepens, and the shore is generally bold, except off the west side, where is an extensive sandbank. In the vicinity of our anchorage were two small towns, Hwá-fung and Cho-keum. *Phlegethon* visited latter, which is some miles up the river, and had deep water. Tide flows only once in 24 hours.

BROADWAY RIVER.

	20°	51'	10"	North	Lat.	110°	32'	30"	East	Long.
West Point of Nauchau,.....	20	51	10	"	"	110	23	15	"	"
South Point of Luichau,.....	20	25	00	"	"	110	15	35	"	"
Hoi-hau Anchorage,.....	20	7	00	"	"	109	44	50	"	"
Camme Point,.....	20	12	12	"	"	109	13	00	"	"
Cha-yung Island,.....	20	49	00	"	"	108	58	50	"	"
Gui-chow West Point,.....	20	55	00	"	"	108	9	15	"	"
Pakloong Cape,.....	21	31	18	"	"	107	42	15	"	"
Cow-tow-shan, South Point,.....	20	55	20	"	"	107	14	24	"	"
Chae Rocks,.....	20	39	5	"	"	106	54	15	"	"
Rock off Oo-nong,.....	20	37	12	"	"	106	41	33	"	"
South Point of Tushan Islands,.....	20	32	42	"	"				"	"

The towns along the coast between Tien-pak 電白 and Macao are neither many nor large, but the numerous islands in this space are inhabited by a rude race of fishermen, who cultivate them to a large extent. Hailing-shan 海凌山 is the largest one, and St. John's or 上川 Shang-chuen is the most celebrated among them. The chart and *Horsburgh's Directory* are the best guides now available until a new survey is made, and we therefore proceed directly to the approaches to Canton river.

San-chau, 三龕 or San-tsau, which forms the western side of the entrance to the Hueng river or Broadway, is the next large island to the north-eastward of Tyloo 大老 island, and its south-east point bears W. by N. 15½ miles from the Little Ladrone. The space between San-chau and Tyloo is shoal, with some islets and rocks adjoining the north-east end of the latter. The depths decrease gradually off San-chau, but it is not so bold to approach as the islands to the westward, for soundings of 3 to 4 fathoms extend a considerable distance from it. There is a conical islet and some rocks nearly touching its east point, with 3 fathoms close to them.

Montanha, or Tai-wong-kum 大橫琴 Island, forming the eastern side of the entrance to the Broadway, is a large high island to the N.E. of San-chau, and close to it on the north-east side is Ko-ho 九澳 or Kau-o island. These two islands form the south side of the Typa anchorage; and the Great West channel is bounded by them on the west, and by Potoe and the other islands adjacent on the east.

Hueng or Broadway River, part of which is called Hak-sha-yéung 黑沙洋 or Black Sand sea; its entrance has sufficient depth to admit a vessel of moderate draught a considerable way up. The Water islands are two small islets lying close off the south end of Montanha; and N.W. ¾ N. a mile from them lies Inside islet, having a small inlet, called Lark bay, between it and Morgan point (608 feet above the sea), the west extreme of Montanha. These islands are on the east side of the Broadway entrance, and Coffin island, bearing S.W. by W. ¼ W. distant 4 miles from the Water islands, is on the western side. At 5 miles in a S. ¾ E. direction from Montanha peak and 2½ miles from the Water islands is a shoal patch of 12 feet.

Tides.—It is high water, full and change, in the entrance of the Broadway at 11h., and springs rise 7½ feet. The neaps are very irregular, there being then only one flood and one ebb, of any considerable strength, during the 24 hours. The direction of the flood outside is governed principally by the

winds: with strong easterly winds it comes from E.S.E.; and when south-westerly winds prevail, from South. The ebb runs generally to the S.W. Inside the river the tides take the direction of the channel.

Directions.—The best time to enter the Broadway is with the first of the flood, and if a vessel at anchor in Macao roads be obliged to run for it with a N.E. or East wind, about three-quarters ebb will be the best time to leave the roads, that she may meet the first of the flood at the entrance, where it flows sooner than in the roads. Having rounded the east point of Ko-ho island, about $1\frac{1}{4}$ mile distant in $4\frac{1}{2}$ fathoms, steer at any convenient distance round A-po-mi 亞婆尾 point, the high south-east extreme of Montanha, which has 3 fathoms near it, deepening gradually to the eastward towards Potoe island.

When abreast the point, the Water islands will be seen in one with each other, near the western extreme of a bay with a sandy beach. As there are not more than 2 fathoms in this bay at low tide, it should be avoided by steering to pass about half or three-quarters of a mile to the southward of these islands, in $2\frac{1}{2}$ or 3 fathoms, then haul round the western island, preserving the same depth and distance. Do not exceed the distance of one mile to the westward of this island, for beyond that the water shoals fast to $2\frac{1}{2}$ fathoms, towards the San-chau shore. From abreast the islands about a N.N.W. $\frac{1}{2}$ W. course, giving a berth of three-quarters of a mile to Inside islet, will lead up to abreast the west point of Montanha, in 3 and $3\frac{1}{2}$ fathoms at low water, off which a vessel may anchor and be sheltered till the termination of the gale.

From the above point the water shoals gradually towards Ross island on the west side the channel; there is generally a line of fishing-stakes extending westward from the point, with passages among them for vessels. Mong-chau, 芒州 or Ballast island, bears N.N.W., distant $2\frac{1}{4}$ miles, from the west point of Montanha; and between them there are two passages leading to Macao, but both so shoal at low water as only to afford a passage for boats.

N.W. $\frac{1}{2}$ N. about $1\frac{1}{4}$ mile from the west point of Motanha, and fronting the first of the above passages, there is a rock which shows at low water about the size of a small boat. The channel is about a cable's length to the westward of this rock; for W. $\frac{1}{2}$ S. about a mile from it there is another rock, which also shows at low water, and shoal banks bound the channel on both sides. From the west point of Montanha to Ballast island the water is shoal, the edge of the bank leaving only a narrow passage on the east side the eastern rock, with $1\frac{1}{2}$ fathom on it at low water. Pak-tang-shan, 白藤山 a small island with a sharp hummock on its north-east end, lies on the western bank, W. $\frac{1}{2}$ N. distant 3 miles from Ballast island: the bank, composed of mud, has only 6 feet on it, and extends $1\frac{1}{2}$ mile from Pak-tan towards Ballast island, and commencing at the western rock, trends to the N.N.W. the whole length of the channel, contracting it to about the breadth of from half a mile to a mile, with $2\frac{1}{2}$ and 3 fathoms in it.

If intending to proceed farther up than the west point of Montanha, steer N.N.W. towards the rock fronting the first passage to Macao; the soundings will be about 3 fathoms at low water, and the rock should be passed within a cable's length on the west side, to avoid a shoal patch of 2 fathoms in mid-

TYPA ANCHORAGE.

channel. When abreast the rock, steer N.N.W. $\frac{1}{2}$ W. $1\frac{1}{4}$ mile, and the vessel will then be abreast Ballast island, in $2\frac{1}{2}$ fathoms water. This is a safe and convenient anchorage, about 6 miles to the S.W. by W. of Macao, and the boats are kept in sight when passing to or from that place. Fresh water may be obtained in a small bay to the northward, under Beacon hill, which is 690 feet high, and has a remarkable stone on its summit.

The channel for vessels, between Ballast island and the bluff point to the northward, becomes narrow. If intending to proceed higher up, a N.N.W. $\frac{1}{2}$ W. course will lead about a mile above the bluff point, in 3 and $3\frac{1}{2}$ fathoms, and this point ought to be passed at about three-quarters of a mile. If drawing more than 14 feet, wait here for the last of the flood, to pass the Tang rocks, lying a little to the northward, and off which there are only $3\frac{1}{2}$ or 4 fathoms at high water.

From the bluff point, steer N.N.W. $\frac{3}{4}$ W. to pass a long half mile westward of the Tang; and when abreast them, steer about N.W. $\frac{1}{4}$ N., or directly for the entrance of the river, keeping about half a mile off Nam-ye-kok 南野角 point, which forms the east side of the entrance; it has a pagoda on it, and is well covered with trees. Here, the depths begin to increase, and in steering to pass not more than a quarter of a mile off Mo-to 磨刀 fort, to avoid a rock lying in mid-channel, the soundings will be 4 and 5 fathoms. About 4 or 5 miles above this fort, the Broadway separates into two branches: the eastern-most leads up past the district town of 香山 Hiang-shan, and communicates with Canton; the western branch leads to the Si-kiang or West river. The wide opening eastward of Nam-yé-kok point, called the Flats, has a boat passage through it leading to Macao.

If the wind does not admit sailing directly into the entrance of the Broadway, there is room for short tacks between the Water islands and the rocky islets off San-chau, taking care of the latter shore, which is shoal. Farther in, the channel contracts a little, but the tides are of sufficient strength to back and fill past the rocks that lie opposite the passage to the Typa, or where the channel may seem rather narrow for working.

Typa Anchorage or 十字門 Shap-taz-moon.—The eastern entrance to this anchorage is formed between two high islands, that on the south side named Ko-ho or Apomee, and that on the north side named Typa or Kai-keng-tau, 溪頸頭 Cabareta point. Ko-ho is separated from the north-east point of Montanha by a narrow gut with 24 feet water in it, decreasing to 9 or 10 feet farther in towards the Typa. The anchorage is between the west end of Typa island and the east end of Macarera island, and affords secure shelter in from $3\frac{1}{2}$ to 4 fathoms water.

Tides.—In the Typa anchorage, and in Macao harbour, it is high water, full and change, at 10h. 0m. The springs rise about 7 feet; in the Typa they run $1\frac{1}{2}$ and 2 knots per hour, when not influenced by the winds. The ebb runs out of the mouth of the Typa, but it sets across the entrance when outside the points.

Directions.—Vessels entering or leaving the Typa should endeavour to

weigh at half-flood. In entering, steer for the north extreme of Ko-ho island, and pass it pretty close, the deepest water being on this side the entrance. Continue to steer along until the summit of Sylock island is in line with the north extreme of Ko-ho. Keep this latter mark on, or the north point of Sylock just in sight, bearing about E. $\frac{1}{2}$ S., leads in the deepest water; and when the east end of the middle hill on Typa island opens westward of a rocky mount forming the south-west point of the same island, haul gradually to the northward, and anchor near the west point of Typa, with the south point of Sylock open of the north extreme of Ko-ho.

Here, the depth is $3\frac{1}{2}$ to 4 fathoms at low tide, and vessels are sheltered from all winds by the high lands around. The deepest water is near the west point of Typa, for the bay abreast, at the east end of Macarera, is shoal. The watering cove is at the head of this latter bay, and from the north point a reef of rocks projects nearly a quarter of a mile to the eastward; a vessel ought not to go so far northward as to approach this reef. In the middle and eastern parts of the Typa the depths are only 14 and 15 feet at low tide, in the fair channel leading to the anchorage, but no injury can be received by grounding, the bottom being remarkably soft.

Macao Harbour.—Macao stands on a small peninsula projecting from the south-east end of the island of Hiang-shan, on the south-west side of the entrance of Canton river. The peninsula is over 2 miles long, and about half a mile wide at its broadest part, and is connected with the island by a low, narrow, sandy isthmus.

The Inner harbour is formed between the peninsula and the large island of Patera or Padre I., Tui-meen-shan, 對面山 to the westward. Its entrance is narrow, with 12 feet at low water, close to fort San Iago or Barra fort, which is built on the east point; and from thence the soundings are 18 and 22 feet along the western shore of the town.

Macao Roads, called Sha-lek, 沙灘 are from 3 fathoms at low water springs on the west side, to $4\frac{1}{2}$ or 5 fathoms close over to Samcock and the other islands that bound the east side; the bottom is soft loam or loose mud, and anchors bury themselves in it.

Vessels of large draught usually anchor in deep water, with Macao bearing between W. by N. and W.N.W., distant $3\frac{1}{2}$ to 5 miles; but with Ko-ho point S. by W. $\frac{1}{2}$ W., and Macao W.N.W., distant 4 or 5 miles, a large vessel may anchor in $4\frac{1}{2}$ fathoms at low water, and be more conveniently situated.

If drawing under 18 feet, she can anchor with Macao on the same bearing, about $1\frac{1}{2}$ mile off the entrance of the Typa.

Small vessels may anchor in the south-west monsoon in the entrance of the Typa, nearest to the south point, in about 3 fathoms at low water, and a little within Kau-o islet, on the north side of Ko-ho point. In the north-east monsoon they can anchor close to the northern shore, abreast a sandy beach, between the Nine islands and Macao in 3 or $3\frac{1}{2}$ fathoms.

Directions.—The route to Macao harbour through the Typa anchorage, has 13 feet at low tide in the fair track between Typa and the harbour; but only 12 and 11 feet in the large space between Typa island and Macao. The channel

trends in a direct line from the Typa to the harbour, and to avoid the sunken rock, named Pedra-mea, lying about a quarter of a mile eastward of the north-east point of Macarera, keep the north-east point of Montanha open eastward of Macarera; or in passing it, keep rather more than mid-channel towards Typa island.

From thence, steer direct for the entrance of the harbour, there being no other danger except the Pedra Areia rock, on the east side of the channel, from which the south point of the outermost of the two high Ma-lau-chau 馬騮洲 islets, to the south-west of the entrance, bears W. by S. $\frac{1}{2}$ S. distant $1\frac{1}{2}$ mile, and the point of fort San Iago N. W. $\frac{1}{2}$ N. about half a mile. The north-east point of Montanha in line with the east point of Macarera leads clear to the westward of the Pedra Areia; and a vessel will not be too near it, if she does not go eastward of a line drawn from the west point of Typa island to fort San Iago point.

Kau-chau, 九洲 or Nine Islands, are a group of islets about 4 miles to the north-east of Macao. They lie close together, and the depth is 3 fathoms at about half a mile to the eastward of the outermost islet, which bears N.E. by E. from Senhora de Penha hermitage at Macao; S.W. about three-quarters of a mile from this islet there is a rock always above water.

Kum-sing-mun 金星門 Harbour.—From Macao the eastern shore of the island trends to the N.N.E. about 11 miles to Bluff head, where it turns abruptly to the westward and forms a deep bight called Kum-sing-mun harbour. This harbour is safe for small vessels, and it would be a desirable haven for large vessels at the approach of a typhoon, were it not for the extensive flat outside, the depths being only 2 to 3 fathoms to the distance of 2 miles outside the entrance; but they increase quickly to 7 and 8 fathoms, when within half a mile of Bluff head, which is the proper side to steer for in coming from the eastward, and also to keep nearest to when running into the harbour.

The entrance, which is about half a mile wide, and is formed between the south part of Ke-ow 淇澳 island and Bluff head, bears W. by S. 10 miles from Lintin peak, and is 8 miles to the northward of the Nine islands. Between the head and the small islet and sunken rocks, near the opposite shore, the depths are irregular, from 14 to 6 fathoms; but inside, about half a mile West, or W. by S. from the small islet, the bottom is soft, affording safe anchorage in 6, 5, or 4 fathoms, taking care, however, to avoid the shoal patches shown in the chart.

Great Ladrone, or Lau Man-shan, 老萬山 being the outermost island directly fronting the entrance to Canton river, is generally used as a land-fall by vessels bound in from the southward during the South-west monsoon; and with the Little Ladrone adjoining to the westward, and Potoe to the north-westward, bounds the east side of the Great West channel, leading to the river.

This steep bold island may be easily known by its north-west part forming a round mound or dome (1,465 feet high), which being more elevated than the other parts, can be seen about 27 miles from a vessel's deck and 40 miles from the masthead; none of the other islands have a similar appearance, although

most of them are high. The island is about 2 miles in diameter, with a rocky aspect close to the sea, but it is safe to approach, the depths near it being 14 or 15 fathoms. On the south-west part there is a small inlet, named Pumice Stone bay, where fishing-boats take shelter in the North-east monsoon.

Little Ladrone, (Pocking-han of the Chinese) is of a convex sloping form, not so much elevated as the Great Ladrone, and separated from its west side by a narrow channel carrying a depth of 9 to 18 fathoms, but too confined for a vessel, unless in a case of necessity. Near the west side of the islands, the depth is about 10 fathoms, decreasing gradually to 7 fathoms about half a mile to the southward of Potoe; there are 12 fathoms near its south point, and 14 and 15 fathoms near the south and south-east sides of the Great Ladrone.

A small rocky islet lies close to the north-east part of the Little Ladrone, and North nearly three-quarters of a mile from this islet there is a Black rock covered at high tide, with 10 fathoms close around: it will be prudent therefore, in passing this locality at high water when the rock is covered, to keep about mid-channel between the Little Ladrone and Tong-ho island, which lies $2\frac{1}{2}$ miles to the northward. This is the only danger near the Little Ladrone, excepting a high rock close to its northwest side, having a depth near it of 9 and 10 fathoms.

Potoe, 蒲台 or **Passage Island**, bearing N.N.W. $\frac{1}{2}$ W. $5\frac{1}{2}$ miles from the south-west end of the Little Ladrone, is a flat sloping rock, visible about 9 miles, with 5 to 6 fathoms near it all around; but it ought not to be approached too close in light winds, as the eddies occasioned by the freshes out of the river may render a vessel ungovernable, and probably drift her towards it, or Wong-mau, the adjacent island. The channel between it and the south-east point of Montanha is about 5 miles wide, and safe.

Wong-mau 黄茅 and **Leung-nip Islands**.—Wong-mau, lying $1\frac{1}{2}$ mile to the E.N.E. of Potoe, is $1\frac{1}{2}$ mile long, in a north and south direction, and has a peaked hill on its northern part; at nearly half a mile from its west side there are some rocks above water. Liung-nip 兩葉 or Leung-eep, lying a mile to the eastward of Wong-mau, has a round islet off its south end.

At about three-quarters of a mile to the N.W. from the north end of Liung-nip lie two rocks, which cover at springs, and break in blowing weather; therefore, in passing the north end of this island, keep at least a mile from it.

Pak-leak 白瀝 **Island**, called also Putoy, Pu-to-tsz 葡萄子 i.e. Grape island, lies N.E. by N. nearly $1\frac{1}{2}$ mile from the Great Ladrone, and on its north-east part stands a remarkable cone hill, 855 feet high, which is visible from Macao. The island is of irregular shape, and on the southern side the hills are much covered by black rocks. On its eastern side and fronting Hoa-ock islet, there is a cove where fishing-boats find shelter; on its northern side are some small bays in which fresh water may be procured; and near its north-east point there is a rocky islet, on which the fishermen have erected a hut and a fishing-stage. A rock, awash, lies close off its south extreme.

Olio Rock, on which H.M.S. *Clio* struck, 12th December 1841, lies about

2 cables from the west side of Pak-leak, with the north-west extreme of the island bearing N. by W. distant 4 cables' lengths.

Tong-ho Island, 東澳 or 塘壕 bearing N. by E. $\frac{1}{2}$ E. about 2 $\frac{1}{2}$ miles from the Little Ladrone, is 1 $\frac{1}{2}$ mile long, east and west, and of moderate and unequal height. There is a small cove on the north-east part of this island, into which the ship *Boddam*, drawing 21 $\frac{1}{2}$ feet water, was taken by her pilot on the approach of a typhoong. Boddam cove is about 2 cables wide, with 24 feet water in the entrance, 17 and 18 feet well inside, at low water springs, and the bottom all soft mud. Here a vessel may lie at anchor, or if she has none, be run into the mud without risk. On each side the land is steep from the water's edge, terminating in a valley at the head of the cove, where there is a sandy beach and plantain trees. Being the chief rendezvous of the fishing-boats, or a place of refuge from the pirates, it is protected by a fort on the north-west point of the entrance. The rocks along the north-west side of the cove have 12 feet, mud, within 3 or 4 yards of them.

Directions.—This cove will not be readily distinguished until within about 2 miles of the north-east part of Tong-ho. In steering for the entrance, take care to give a berth to a sunken rock, lying about 1 $\frac{1}{2}$ cable to the north-eastward of the fort point; when the head of the cove bears S.W. by W., the vessel will be to the south-east of the rock.

Having brought the cove fairly open on the above bearing, steer for the point on the south-east side of the entrance, and pass it within the distance of half a cable; for the north-west point, where the fort is built, is bordered by rocks. At about 2 or 3 cables to the south-east of the entrance there is also a reef of rocks, which extends between 1 and 2 cables from the south-east part of the island; these are mostly all in sight at high water, and easily avoided by steering from the offing directly for the south-east point of entrance. There is a sunken rock off the north-west part of the cove, but when passing this part of the island it will be avoided by keeping about three-quarters of a mile off shore. The flood sets N.W. outside the entrance, and the ebb S.E. They both run pretty strong, but there is scarcely a drain in the cove.

Chuk-wan Island, or Chuk-chau 竹洲.—These two islands lie about E. by N. 1 $\frac{1}{2}$ miles from Pak-leak, and the larger island (the eastern one) has a high rocky islet, named Sharp island, lying off its south-east point, and a small bay on its north side. There are 14 fathoms water between Hoa-ock and the western island, and 11 and 12 fathoms to the northward of the group.

Raleigh Rock, on which H.M.S. *Raleigh* struck on the 14th April 1857, is a small pinnacle, upon which a moderate sea breaks at low water springs, with 9 and 10 fathoms close to. Its position is lat. 22° 2' N., long. 113° 47' E. nearly in mid-channel between Pak-leak island and the South White rock, distant 2 $\frac{1}{2}$ miles from the latter. When on the rock, the gap in the centre of the South White rock is in line with the right extreme of a small wedge-shaped island off the eastern side of Lafsami island bearing N.E. by N.; the highest part of Ai-chau island E. $\frac{1}{2}$ N.; and the peak of the Great Ladrone is over the western slope of Pak-leak S.S.W. $\frac{1}{2}$ W.

North and South White Rocks are two high white rocks half a mile

apart, lying North about $3\frac{1}{2}$ miles from the western or small Chuk-wan island. From the southern rock the north-east point of the eastern Chuk-wan bears S.S.W. $\frac{1}{2}$ W., distant $4\frac{1}{2}$ miles; the peak or highest part of Ty-lo, W. by N. $\frac{3}{4}$ N., nearly 6 miles; the north point of Liung-nip, W. by S. $\frac{1}{4}$ S., 6 miles; the southern part of eastern Chi-chau, N.E. b. E. $\frac{3}{4}$ E., $5\frac{1}{2}$ miles; and the western Ai-chau island S.E. by E. $\frac{1}{2}$ E., distant 6 miles. About a mile to the south-east of the southern rock there is a small black rock, visible only at low springs, having 9 fathoms water close around. Between the two high rocks, but a little more westerly, there is a small rock above water.

Caution.—The White rocks may be seen in fine weather in time to avoid them, and the depth is about 9 fathoms near their eastern side, 8 fathoms on the western and northern sides, and 9 fathoms in the channel, between them and Chuk-wan; but since the loss of the *Raleigh*, it will be prudent not to use this channel until it has been more accurately examined.

Ai-chau 矮洲 Islands.—These two islands lie N.E. by E. $\frac{1}{4}$ E., 4 miles from the eastern Chuk-wan, and the eastern or larger island is separated from the smaller one on its west side by a very narrow channel with 4 and 5 fathoms in it at low water. The depth on the southern side of these islands is 14 fathoms, on the north and east sides 12 and 13 fathoms, and on the west side 8 or 9 fathoms.

Hill Inlet, lying N.E. distant $1\frac{1}{2}$ miles from the northern part of the eastern Ai-chau, has 11 and 12 fathoms water at a short distance from the rocks around it.

Samoun Group.—The Sam-moon 三門 i.e. Three Channels, are a group of three small islands lying $2\frac{1}{2}$ miles to the eastward of Ai-chau, and extend about $3\frac{1}{2}$ miles in a N.W. and S.E. direction, with narrow passages between them. Near the north-west part of the north-west island, called Pak-chau, there are two peaked islets, and on the northern side of the group, between the eastern and middle islands, there is another high rocky islet, named Gau-ze, with a bed of rocks lying to the southward of it; the south end of the eastern island is the highest part of the group and forms a round mound. There is a small harbour on the south-west side of the largest island, which would afford shelter to two or three vessels against a N.E. gale. The anchorage is in 6 to 10 fathoms, muddy bottom.

These islands lie to the north-west of the Taitami channel, and a vessel may pass either to the southward of them, or between them and Lingting, in from 12 to 15 fathoms water.

Lingting Island, or Ngoi Lingting, 外伶仃 bearing W. $\frac{3}{4}$ N. distant 15 miles from the North-east head of the Lema islands, is of rugged appearance, about $1\frac{1}{2}$ mile long, east and west, and rises to a peak near its centre. There are two rocks, one awash and the other above water, lying to the eastward of the north point of the island, and bearing N. by E. and S. by W. of each other; the outer one, awash, lies E.N.E. distant nearly a mile from the north point, and the other S. by W. about half a mile from the outer one, with depths near them of 13 fathoms, but foul ground between.

The Needle rocks, on which H.M.S. *Doris* struck in 1813, are two heads lying within a few yards of each other, about $1\frac{1}{2}$ cable's length to the south-west of the low rocky north-west extreme of Lingting, and are so sharp that it is difficult to keep the lead fixed on their points; at low springs they have about 6 feet water on them, at which time, with a swell they may probably show either breakers or a rippling. From the outer rock the south-west extreme of the Lema islands is just shut in behind the south-west point of Lingting, and the highest part of Lamma island is a very little way over the low north-west point. A vessel will avoid them, when passing round the north-west end of Lingting, by not approaching it within half a mile, and by keeping the south-west extreme of the Lema islands a little open to the south-west of Lingting.

The depths close to the north point of Lingting are 18 or 19 fathoms, decreasing to 14 and 15 about a mile distant; to the southward and westward of the island, there are 10, 11, and 12 fathoms over a soft bottom.

Caution.—When passing to the northward of Lingting in the night, it will be prudent to keep 1 or 2 miles off, on account of the two rocks lying off its north-east side.

Ty-lo Island, or Tai-lau-chau, 大流洲 the southern of the range of small islands bounding the east side of Macao roads, is high near the western part, sloping a little to the eastward. It lies N. $\frac{1}{2}$ E. from the north end of Leung-nip, from which it is separated by a good channel $2\frac{1}{2}$ miles wide; but in using it, take care to avoid the rocks off the northern point of the latter. Ty-lock, **大碌** lying about half a mile northward of Ty-lo, is a small rocky islet, having a large rock on its summit.

Sam-cock 三角 Island, the largest of the above range, lies $1\frac{1}{2}$ mile in a N.N.E. direction from Ty-lock, and is of moderate height, rugged in appearance, and in the form of a pyramid. Between this island and Ty-lock there is a small islet, named Sy-lock, **細碌** and two rocks above water; but the channels between these are so narrow, that they should not be attempted on account of the strong eddies, which render vessels frequently unmanageable. In passing between Sam-cock and Chung-chau-si, the next island to the northward, keep in mid-channel or nearest to the latter, in 6 or 7 fathoms water, as there are only $3\frac{1}{2}$ fathoms at a quarter of a mile from the north point of Sam-cock, $3\frac{1}{2}$ fathoms about a quarter of a mile off the west point, and only 3 fathoms the same distance off its eastern point.

Chung-chau-si, 清洲西 or West Water island, the northernmost of this range, lies N.N.E., about $1\frac{1}{2}$ mile from Sam-cock, and there are 7 fathoms water near it to the eastward, and 5 and 6 fathoms to the northward and westward. The depths are 5 or $5\frac{1}{2}$ fathoms along the western side of this range from Ty-lo to Chung-chau-si, and 7 fathoms on the eastern side; the ebb stream runs strong from the northward along the western side, and the flood in eddies from the south-eastward.

Four-foot Rock.—This small dangerous needle rock, with only 4 feet on it and 10 fathoms close around, lies E.S.E. 3 miles from Chung-chau-si, and from it the summit of Ty-lo bears S.W. by W., the centre of Sam-cock W. $\frac{1}{4}$ S.,

and the small islet lying off the north-west end of Chung-chau N.N.E. $\frac{1}{2}$ E. When Chuck-tu-san island (which bears S.E. by S. 3 miles from Chung-chau) and the small islet off the north-west end of Chung-chau are on the same bearing, about N.N.E. $\frac{1}{2}$ E. and S.S.W. $\frac{1}{2}$ W., the rock will be between the two, but nearest the former; therefore if a vessel has occasion to enter Macao roads by this channel, and keeps about three-quarters of a mile off Lafsami and the south side of Chung-chau, she will pass in mid-channel, and have 10 or 12 fathoms water, decreasing to 7 fathoms as she nears Chung-chau-si.

Chung-chau, 清洲 or Water Island, which with the islands to the southward of it bound the south-west side of the Lantao channel, lies about S.W. by W. $2\frac{1}{4}$ miles from the south-west point of Lantao, is high, and near its north point there is a peaked hill. It is $1\frac{1}{4}$ mile long, N.W. and S.E., and has not any hidden dangers near its northern side. The soundings in the channel between it and the south point of Lantao will be irregular, owing to the strong eddies generally prevailing hereabout; the depths being 7 fathoms near the point of Lantao, 18 or 20 fathoms in mid-channel, and 28 or 30 fathoms close over to Chung-chau. There is a cove for boats on the north side of the island, and a short distance to the westward of its northern point there is a round and high islet, with a large rock on its summit; round this islet to the northward and westward the depth is 15 fathoms.

Nau-tau-mun, or Ngau-tau-moon 牛頭門 i.e. Bullock's Head Gate, the next island to the south-east, is small but high, and is separated from Chung-chau by a narrow channel with shoal water near Chung-chau. The depths near the north side of Nau-tau-mun are 15, 16, and 17 fathoms, rather irregular; but to the southward, in the bay, there are only 3, 4, and 5 fathoms.

Lafsami Island, or more correctly Lap-sap-mi 爛雀尾 lying to the southward of Nau-tau-mun, and separated from it by a narrow channel, is larger than either Chung-chau or Nau-tau-mun. The depth on the north side of the island in the Lantao channel is very irregular, from 17 to 25 fathoms in overfalls, about a quarter of a mile off, and on the south side 10 and 11 fathoms. This island from some views forms a peak; and at a short distance to the eastward of its south point there is a rocky islet.

Chi-chau Islands.—Chi-chau 芝洲 is the largest of two islands lying $2\frac{1}{4}$ miles to the E.S.E. of Lafsami, and forms the south side of the east entrance of the Lantao channel. This island is high, of round appearance, and separated by a narrow channel from the smaller island, which is lower, and lies on its western side; a sunken rock lies off its north-east point, and a patch of 4 fathoms about a quarter of a mile from its north point. There is a safe channel $1\frac{1}{4}$ mile wide and carrying 9 and 10 fathoms, between the west point of the smaller island and the rocky islet lying off the eastern side of Lafsami; it may be taken by a vessel bound up the river when she enters the islands from the south-east between Chuk-wan and Ai-chau.

Soko Islands, or Shek-ko-chau 石高洲.—A-chau, 鴉洲 or Crow island, the southern of the two Soko islands, lies S.E. $\frac{1}{2}$ E. distant nearly 4 miles from the south point of Lantao, and forms the north side of the eastern entrance of the Lantao channel. The south point of A-chau is high, and rises very steep.

having 7 fathoms water close to; the depths between it and Chi-chau are 11 or 12 fathoms in mid-channel, 13 fathoms nearly over to Chi-chau, deepening suddenly to 25 or 30 fathoms in a hole or swash close to Chi-chau.

The other island lies a short distance to the northward of A-chau, and is about a mile long, east and west, and very narrow in the middle. A sand-spit extends nearly West upwards of $1\frac{1}{2}$ mile from the west side of this island, and on the west extreme of the spit there are $2\frac{1}{2}$ fathoms at low water, decreasing quickly to 2 and $1\frac{1}{2}$ fathoms towards the island.

A rocky islet and two rocks above water lie between the two Soko islands nearest to the south-west point of the northern one; there is also a high rocky islet lying nearly a mile to the eastward of A-chau, and which may be passed at half a mile to the southward in 7 fathoms water, but the ground is foul between it and A-chau.

Ky-pong 雞澎 Islands are the southernmost group of the archipelago fronting the entrance to Canton river. Pak-tsim, **北尖** the largest and north-eastern island, bearing E. by S. 16 miles from the Great Ladrone, has, near its western extreme, two high remarkable peaks, called the Asses Ears, or Keem-chung-mi **鉗虫尾** which make it easily known, as they rise from the same base almost perpendicularly from the sea to the height of 980 feet, and sloping suddenly down on the north-east side, are united to a piece of moderately elevated land, which terminates that part of the island.

Tai-mi-wan, 尖尾灣 the next island to the south-west, is of considerable size, and separated from the south-west point of Pak-tsim by a channel about half a mile wide. A range of islets extends $4\frac{1}{2}$ miles in a south-westerly direction from Tai-mi-wan; the outermost islet, (90 feet high) called Gap rock, but Ma-mi-chau **馬尾洲** by the Chinese, has a small gap in it, and is the south-westernmost islet of this group. Between the south end of Tai-mi-wan and Peaked rock (180 feet high), the easternmost islet of the range, there is a passage $1\frac{1}{2}$ mile wide, with 18 fathoms least water in it. A Rugged rock, 50 feet high, lies about $1\frac{1}{2}$ mile N.W. $\frac{1}{4}$ W. from the south end of Tai-mi-wan. The passage between Nut island and the islet nearest to it to the southward, is about half a mile wide, and carries a depth of from 10 to 26 fathoms. There is also, between Gap rock and the other islets to the eastward, an opening a mile wide, with from 16 to 18 fathoms water in it, and safe to pass through with a steady wind.

Kwei-tau, 龜頭 or Tortoise Head, lying about three-quarters of a mile from the east point of Pak-tsim, is a white rocky islet, having other rocks between it and the point, neither of which ought to be approached. Gay-une is another islet, rather more than a mile to the northward of the north end of Pak-tsim; there is a passage between it and the latter, which, however, ought not to be attempted unless from necessity, for there is said to exist some straggling rocks on which the sea breaks at times. The following danger requires the greatest care to avoid, when vessels are passing through the Tai-ta-mi channel between the westernmost of the Lema islands and these rocks.

Cambridge Rock, on which a vessel of this name struck in 1820, when

running through the channel between Pak-tsim and the Lema islands, is of a spiral form, with only 17 feet water on it, and sometimes breaks. It lies N. by W. $\frac{1}{2}$ W. $2\frac{1}{2}$ miles from Kwei-tau, and N.N.E. $\frac{1}{2}$ E. $1\frac{1}{2}$ mile from the north point of Pak-tsim; and from it the highest part of Chi-chau island is in line with Hill islet bearing N.W., and the south-east side of Gay-une inlet is on with the north-west extreme of Rugged rock, S.W. $\frac{1}{2}$ W. There are 4 and 5 fathoms on the rocks which surround the spiral rock, from thence the depths increase to 23 fathoms in the Tai-ta-mi channel between the rock and the Lema islands. This channel is $2\frac{1}{2}$ miles wide, and safe by borrowing towards the latter islands in passing through.

Lema Islands consist of three large and one small island, extending in an E.N.E. and W.S.W. direction $12\frac{1}{2}$ miles. The easternmost and largest island, named *Tam-kon*, 擔杆 is 6 miles long and a mile broad, of moderate height and undulating, and separated from *Ye-chau*, the middle island, by the narrow Yat-moon channel.

The *Yat-moon* — 門 channel, by Capt. Bate's survey of 1850, is free of dangers, and carries a depth of from 12 to 19 fathoms, but the log of the ship *Cordelia* shows there is a sunken rock in mid-channel:—

"November 14th, 1834—the current and swell setting the *Cordelia* bodily on the land, and having the Yat-moon channel open, steered for it, keeping near the south-west end of Tam-kon, to prevent the vessel from being carried by the current on a small rocky islet lying off the north-east point of Ye-chau; afterwards endeavoured to steer in mid-channel, but the eddy current swept the vessel into the surf that rebounded from the point of Tam-kon, when at the same time a sunken rock appeared about mid-channel, upon which the vessel must have been lost by following the track intended. Although blowing strong outside, the sails flapped to the masts as we entered the channel, which ought not to be adopted unless in a case of extreme necessity, and then the shore of Tam-kon should be kept close aboard to avoid the rock.*

Ye-chau 二洲 is the middle and highest of the Lema islands, and from most positions it appears flat on the top. Close to its north-east part lies a small rocky islet, visible when the Yat-moon channel is open.

Poun-tin, the third or southern of the large islands, is separated from Ye-chau by the narrow Ye-chau channel, having from 19 to 30 fathoms water in it. This island (1,210 feet high) forms more in a peak than either of the other two, and has a point projecting to the westward with a hummock on it, named E-chau head. To the southward of this head lies Tai-ta-mi 大擔尾, a small but high island, with a narrow channel between it and the head. Tai-ta-mi forms the north-east boundary of the Tai-ta-mi channel, which has Cambridge rock, Pak-tsim island, and the Kwei-tau bounding its western side.

Directions.—The Lema islands on their southern side are all steep and rocky, not affording even a single bay for a boat to shelter in, and the soundings are 22 or 23 fathoms about $1\frac{1}{2}$ mile from their coast; on their northern sides the depth is generally 15 or 16 fathoms close to the shore. Vessels in the

* *Horsburgh's Directory*, vol. II. p. 396, 7th edition.

North-east monsoon should endeavour to pass between the north end of Tam-kong and Pu-toy, which lies 6 miles to the northward, and its north end when viewed from the E.N.E. forms a small peaked hummock.

Lamma Island, or Nam-a, 南丫 lies off the south-west side of Hongkong, and its south-west point bears N.W. by W. $\frac{1}{2}$ W. 13 miles from the north-east extreme of the Lema islands, and N.E. $5\frac{1}{4}$ miles from the north point of Lingting. The island is of rocky appearance, about 4 miles long, north and south, and 2 miles wide, but is narrowed near the middle by a deep cove on its east side, and a long bay on its west side, so that between them the island is not more than a quarter of a mile across. The north end of the island is about a mile distant from the south-west part of Hongkong.*

From the north point of the long bay, on the west side of the island, the shore trends N. $\frac{1}{2}$ E. a mile to another point, off which are some sunken rocks lying half a mile from the shore. The south-east point of the island is remarkable from its being a small round hummock, of bright green appearance on the top, and rocky near the water's edge; this part of the island, as far as the eastern point, is rocky close to the shore, with 13 or 14 fathoms water half a mile off.

The cove on the east side of the island is to the northward of its eastern point, and is about $1\frac{1}{2}$ mile deep and two-thirds of a mile wide. It carries a depth of 8 to $3\frac{1}{2}$ fathoms, and a vessel may anchor in 6 or 7 fathoms water, over rocky bottom, about half a mile in from the entrance, and ride in security, being landlocked. A small islet, named George island, 234 feet high, lies close to the northward of the north point of the cove.

Lamma Channels.—The East Lamma channel, between Lamma island and Hongkong, is about a mile wide, and carries a general depth of from 17 to 23 fathoms; but a vessel will find a good and sheltered anchorage between George island and the north point of Lamma in 7 or 8 fathoms. There appear to be no dangers in this channel, but a rock† is said to lie off the south-east point of Mas-kong or Round island, which is on the Hongkong shore, fronting Deep water or Heong-kong bay.

On the western side of Lamma, between it and the islands lying off the east side of Lantau, the depth is generally 5 fathoms on a mud bottom; when bound through the East Lamma channel from the southward, the soundings will decrease rapidly to 7 and 6 fathoms after rounding the north point of Lamma. About a third of a mile N.N.E. from the north point is a rocky patch of 8 fathoms, surrounded by depths of 14 to 21 fathoms.

Chung Island, or Cheung-chau, 長洲 lies near the south-east side of Lantau, and N. $\frac{1}{4}$ W. 5 miles from Lingting. Its north and south parts are high, but it is narrowed near the middle, which is low, by two bays, one on the east, the other on the west side of the island. A vessel of moderate draught will find good shelter during an easterly gale, in the western bay, in $3\frac{1}{2}$ fathoms. There is no danger in passing the south end of the island, there being 7 and 8 fathoms close to, and 5 and 6 fathoms near the western part; but East, about

* See Chart of Hongkong, No. 1,406; scale, $m = 2.4$ inches.

† This rock is doubtful; it is not shown in Capt. Belcher's survey of 1861.

3 cables from the eastern part of the island, there is a small rock, which dries at low water, and has 6 and 7 fathoms close around it.

Pu-toy, 蒲台 lying off the south end of Hongkong and N.N.W. $\frac{1}{2}$ W. 6 miles from the North-east head of the Lema islands, is the southern island of a group which bounds the northern side of the Lema channel. The island is of moderate height, the appearance in general barren, there being only a small quantity of brushwood in the valleys. On its western side there is a cove for boats, with a small rocky islet. The depth of water between Pu-toy and the north-east end of the Lema islands is 18 and 19 fathoms.

Lo-chan, 老洲 or Beaufort Island, lying to the northward of Pu-toy, and separated from it by a narrow channel, is high, flattened at the top, and very steep all around; about its north-western brow there is a small peak, with a few large and remarkable rocks on it. Off its south-west side, at the distance of half a mile, are some large rocks above water, having no hidden dangers near them.

Sun-kong or Sung-kong, 送羌 bearing East about $1\frac{1}{2}$ miles from Lo-chan, is a small but high island, rising in a peak, 466 feet high, towards the centre; near the north-western part of the island there are some rocks considerably above water.

Wag-lan, bearing N. $\frac{1}{2}$ W. 7 miles from the North-east head of the Lema islands, and East about three-quarters of a mile from Sun-kong, is a small barren rocky islet, the easternmost of this group, having 16 and 17 fathoms water at a small distance round it to the eastward.

Hongkong Island, or Hlang-kiang, 香港 i.e. Fragrant Streams, about 9 miles long, N.W. by W. and S.E. by E., 2 to $5\frac{1}{2}$ miles broad, and with an area of about 29 square miles, lies between Lamma island and the main, from which it is separated by a narrow channel a quarter of a mile wide, named Lyemun pass, or Li-yu-moon, **鯉魚門** i.e. Carp-fish pass.

Hongkong Roads.—The shores of Hongkong are indented by numerous bays, of which the most considerable are on the south-east side of the island. There is good anchorage throughout the entire channel between the island and the main, except in the Lyemun pass, where the water is deep; but the best anchorage is in front of the city, where the depth is from 5 to 9 fathoms over good holding ground. During the typhoong months, the anchorage in the northern part of the harbour is considered preferable, in consequence of the shelter afforded by the Kau-lung **九龍** or Kow-loon peninsula to the north-east, the point from which the wind blows hardest.

Tides.—It is high water, full and change, in Hongkong roads at 10h. 15m. and the springs rise about $4\frac{1}{2}$ feet. The tides around the island are irregular, flowing and ebbing without any apparent change of direction at the surface, and sometimes there appears to be only one tide in 24 hours.

Tytam 大潭 Bay and Harbour.—There are several small bays on the southern shore of Hongkong, all of which are safe for small vessels; but at the south-east part of the island is a deep inlet, named Tytam bay, which

is $2\frac{1}{2}$ miles deep, $1\frac{1}{2}$ miles wide at entrance, free from danger, and carries a depth of 10 to 6 fathoms. Tytam head, the western point of entrance, is a high bluff, with 18 and 14 fathoms water near it; from thence the western shore of the bay trends about N. by E. three-quarters of a mile to a small sandy bay, with a rock inlet fronting the beach. About half a mile to the northward of the islet the land forms a round projecting point, to the northward of which is a larger bay, with a sandy beach, in which is Tytam village.

Tylong 大龍 head, or Cape d'Aguilar, off which are two green islets, forms the eastern point of entrance to Tytam bay, and from thence the eastern shore of the bay bends round to the northward for 2 miles, and terminates in a small inlet, called Tytam harbour, carrying 4 to 6 fathoms, but its head, to the north-west, is shoal and rocky. This bay would be useful to a vessel, in the event of her being near Wag-lan at the close of the day, with the probability of a dark and tempestuous night, for by running in she will at any rate be snug.

Directions.—If bound to Tytam bay from the eastward, the route may either be taken to the northward of Wag-lan, Sun-kong, and Lo-chau islands through the Shing-shi-mun pass 雙著門 or Chop-sticks gate, or to the southward of these islands through the Lema channel; then round the Castle rock to the westward of Lo-chau. But the passage to the northward is preferable, for after opening the bay, a vessel may haul to the northward into any convenient berth, whereas, by taking the southern route, if the wind be northerly, she will have to turn in.

If Shing-shi-mun pass be taken, give Wag-lan and Sun-kong a berth of about half or three-quarters of a mile, and steer for the Pass, which is formed by the high island of Lo-chau to the southward, and by the two green islets off Tylong head to the northward: in this track a vessel will carry 17 and 16 fathoms water from Wag-lan, and, by keeping in mid-channel, will have 27 and 30 fathoms, deepening as Lo-chau is neared, and shoaling to 14 or 16 fathoms near the islets. The depths will shoal fast to 10 or 11 fathoms when about 1 or $1\frac{1}{2}$ mile to the westward of the two islets. From thence steer for the anchorage off Tytam village, on the western shore, in $6\frac{1}{2}$ fathoms. In this position a vessel will be well sheltered from all winds, except those from South, which cannot affect her much, as the islands and rocks contiguous to the entrance prevent much swell from rolling in.

Lantau, Nam-tai-o, 南大澳 or Ty-ho, also known as Ta-yu 大嶼 the large high island lying to the westward of Hongkong, is 14 miles long, N.E. by E. and S.W. by W., and its greatest breadth is $5\frac{1}{2}$ miles. About the centre of the island the land is high, making in peaks, the highest and westernmost of which rises 3,060 feet above the sea level.

West Coast.—Close to the western shore of Lantau, at $1\frac{1}{2}$ mile from the south point, there is a peaked hill, which at high water is insulated. From this hill to the point a mud flat extends about a third of a mile off shore, with only 2 fathoms water on it; therefore in passing this part of the island, do not decrease the depth under 7 fathoms, as the soundings will shoal fast from 17 to 7 fathoms near the edge of the flat.

About a mile to the N.N.W. of the peaked hill, and three-quarters of a mile from the nearest shore, there is a rock above water having near it a depth of 15 fathoms, and between it and the shore 7 fathoms, decreasing quickly towards the latter. N.E. by N. $1\frac{1}{4}$ mile from this rock is a bluff point, and to the eastward of the latter a bay, in which is the village of Ty-ho, 大澳 where there is a creek or rivulet into which a boat may go at high tide. To the southward of the village are two bays, both of which are shoal, but fresh water may be procured in them.*

North Coast.—On the northern side of Lantao there are two projecting points, three-quarters of a mile apart, between which is the bay and village Sah-lo-wung; and directly fronting the eastern point of the bay and about a quarter of a mile distant, is a small islet, having a rock awash a short distance to the northward of it. Between this islet and Saw-chau, the depth is too small for a vessel of large draught at low water; towards Saw-chau is the deepest water, $3\frac{1}{2}$ and $4\frac{1}{2}$ fathoms, shoaling near the Lantao shore to 3 and $2\frac{1}{2}$ fathoms, on a soft mud bottom.

Immediately eastward of the small islet off Sah-lo-wung is another bay formed by Chu-lu-cock 赤瀝角 or Chik-lek-kok island, extending north and south $1\frac{1}{2}$ mile; in this bay is Tung-chung 東涌 village. Red point, the north-east extreme of Chu-lu-cock, has a remarkable rocky appearance, and is frequented by a company of stone-cutters, who cut the granite rocks into slabs for building. The south point of this island is so near to the Lantao shore, that in passing it is difficult to distinguish it to be an island. In Tung-chung bay the water is shoal, being only 2 and $2\frac{1}{2}$ fathoms; and there is but little water on the eastern side of Chu-lu-cock; from thence the northern shore of Lantao is not inhabited.

About $1\frac{1}{2}$ mile E.N.E. of Red point lies a small green island, and three-quarters of a mile farther in the same direction another small island, which are the Brothers of Dalrymple, or Mo-toe of the Chinese. A rock above water, lies about half a mile to the southward of the East Brother or Sheung-mo-to, 上磨刀 and about a mile off the Lantao shore.

The depths near the Brothers are 7 and 8 fathoms, shoaling from the eastern islet towards the northern shore into 4 or 5 fathoms, and making the channel narrower; a small reef borders the western side of the West Brother or Ha-mo-to 下磨刀. There is a good channel, with 8 or 10 fathoms water, between the East Brother and the large rock to the southward of it; the rock is high above water, and bold on all sides. From the East Brother the north-east point of Lantao bears E. by N. 4 miles.

South Coast.—The southern coast of Lantao forms two large bays, with shoal water in them. The larger and eastern bay, to the north-eastward of the Soko islands, has in it a small islet and some rocks above water, and a populous village at its head. The depth is 2 fathoms within the rocks, and 4 and 5 fathoms in the entrance of the bay, where there appears to be good anchorage.

* See Plan of Tong-ku or Urmston Bay, with North-west side of Lantao Island, No. 1,323; scale, m — 1 inch.

The western bay is less capacious than the other, and carries a depth of 2 to 5 fathoms.

Off the east entrance point of the eastern of the above bays, and separated from it by a narrow channel, is a high green island named Pa-tung, and close to its west side are some rocks above water. A small vessel will find good anchorage to the westward of these rocks, anchoring with them bearing about S. by E. three-quarters of a mile distant, in 5 fathoms water. Fresh water may be procured at the sandy beaches on the south shore of Lantao. In the channel formed between Lantao and Pa-tung there are 7 fathoms water; the ebb tide here runs to the eastward.

Cap-sing-mun Passage, or Throat Gates, or correctly, Kap-sui-moon, **急水門** i. e. Swift-water Passage, formed between the north point of Lantao and the main, is separated into two channels by Mah-wan or **馬鞍** Ma-on island. The channel on the west side of Mah-wan being extremely narrow, with dangerous eddies, ought never to be used, especially as the channel to the northward of that island is wider, with good anchorage, a regular tide, and the advantage in the North-east monsoon of being to windward.

Directions.—In proceeding through the Cap-sing-mun passage from westward, keep close over to the mainland to avoid a reef, extending a third of a mile from the north-east point of Mah-wan; then keep in mid-channel between that island and Chung-hue island, which lies a mile to the eastward, and after rounding the south end of the latter, if bound for Hongkong roads, steer for the west end of Won-chu-chau or Stone-cutters' island.

Saw-chau, 筲洲 lying 3 miles to the northward of Lantao, and S.E. $4\frac{1}{2}$ miles from Lintin, is a small narrow island nearly a mile long, with a sharp hummock on its north end. To the northward of Saw-chau, about one mile distant, there is another island, higher and more rocky in its appearance, named Tong-ku; and S.W. by S. from the south point of Tong-ku, and W. by N. from the north point of Saw-chau, there are two rocks above water, about a mile distant from each island: the western rock is named White rock, from its white appearance. The depths near the eastern sides of Saw-chau and Tong-ku are 5 to 9 fathoms; to the westward of Tong-ku, $4\frac{1}{2}$ fathoms; and near the rocks 5 fathoms, at low water.*

Urmston Bay, or Tong-ku 鼓銅 Harbour, bounded by the islands Tong-ku and Saw-chau to the west, and Castle Peak land to the east, is a safe anchorage, and tolerably sheltered from all winds. The best berth is in about 8 or 9 fathoms, with the peak of Tong-ku just open of the south end of Lintin, and nearer to the mainland than to Tong-ku.

The proper channel into Urmston bay for vessels of large draught is to the northward of Tong-ku, and has a depth of 7 and 8 fathoms; and the approach to it from southward is between the east side of Lintin South sand and the islands of Saw-chau and Tong-ku. The passage to the southward of Saw-chau has only $3\frac{1}{4}$ fathoms in it, and between Saw-chau and Tong-ku the depth is only $2\frac{1}{4}$ fathoms.

* See Chart of Canton River, Sheet I, No. 1,782; scale, $m = 1\frac{1}{2}$ inch.

The channel between White rock and the east side of Lintin spit is about 2 miles wide, with 7 and 8 fathoms, decreasing towards the spit to 5 fathoms. If working to the northward, do not stand so far west as to shoal to 5 fathoms, or to bring the east side of Lintin to the northward of N. by W. With the south end of Saw-chau bearing E.N.E., and Lintin peak North, a vessel will be on the southern edge of the spit in $4\frac{1}{2}$ or 5 fathoms, sand and mud.

Lintin Island, 伶仃 i.e. the Orphan, lying to the W.N.W. of Urmston bay, is about 7 miles in circumference, and its summit terminates in a high conical peak, which bears N.E. 14 miles from the outermost of the Nine islands. A narrow spit of sand extends about $4\frac{1}{2}$ miles to the southward from the south end of the island, having $3\frac{1}{2}$ fathoms water on its outer part, but only 9 feet within $2\frac{1}{2}$ miles of the island, and rather less in some places. The spit is steep-to on the west side, with 10 fathoms near it, 7 fathoms touching its verge, then 3 fathoms; and the water suddenly deepens from 3 fathoms on the east side to 7 or 8 fathoms. When the island is approached within 5 miles, a vessel of large draught should not, when standing eastward towards this spit, bring the west end of the island to the westward of N. $\frac{1}{2}$ W., or tack immediately after deepening to 9 or 10 fathoms; but in the night she ought not to deepen to above 7 or at most 8 fathoms.

A narrow sandbank also extends $13\frac{1}{2}$ miles in a N.N.W. direction from the north side of Lintin, and on its northern part is a narrow ridge called Lintin bar, the southern end of which, in $2\frac{1}{2}$ fathoms, bears W. by N. $\frac{1}{2}$ N. from Fan-siak islet, and N.N.W. $\frac{1}{4}$ W. about $6\frac{1}{2}$ miles from Lintin peak; the least water on the bar is 12 feet, and its northern end in $2\frac{1}{2}$ fathoms lies N.W. by N. $10\frac{1}{2}$ miles from Fan-siak, with Sam-pan-chau just open westward of the west extreme of Anung-hoy island.

The anchorage off Lintin is in 10 or 12 fathoms, about $1\frac{1}{2}$ mile from the sandy beach on its south-west side; under 10 fathoms the water shoals quickly to the shore.

Fan-siak Islet, or Fan-shak 礮石 i.e. Alum rock.—Two rocky islets, the easternmost of which is the largest and called Fan-siak, and the other White rock, lie nearly North $4\frac{1}{2}$ miles from the peak of Lintin. When these islets are in one bearing E. by S. $\frac{1}{2}$ S., the southern extremity of Lintin bar is on the same bearing. The east side of the channel between the south extremity of the bar and Lintin is bounded by mud banks, with irregular soundings on them of $2\frac{1}{2}$ and $3\frac{1}{2}$ fathoms at low water.

Lankeet Flat, or bar, extending from the north end of Lintin bar across the channel to the shoal mud-bank on the west side, and N.W. towards Lankeet island, consists of sand and mud, with hard bottom in some places. The depths on it are 3 and $3\frac{1}{2}$ fathoms at low tide, and $4\frac{1}{2}$ to $4\frac{3}{4}$ fathoms at high water springs; a vessel drawing more than 20 feet ought not to pass over it until about half flood. Close to the northward of this flat there are generally some fishing-stakes, and boats fastened to them, and others between Lintin and Lankeet; care should be taken not to run over the boats, which generally show lights in the night.

Lankeet Island, or Lung-ute, 龍穴 bearing N N.W. $\frac{1}{2}$ W. 19 miles

from Lintin peak, is formed of two hills, sloping into a low point at the west end, where there is a well of fresh water by a small temple close to some trees; but the island is not inhabited. A spit extends S.S.E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from its south-west point, with only 2 and $2\frac{1}{2}$ fathoms over it at low water. Between this spit or flat and a long narrow sand to the westward there is a channel leading close past the west point of Lankeet, to the western part of Ty-cock-tau island.

To proceed up this channel, keep a large white patch on Ty-cock-tau in line with the outermost of the rocks projecting off the west end of Lankeet; with this mark on, a vessel will have $4\frac{1}{2}$ or 5 fathoms at high water, about 4 miles from Lankeet; and will carry the same depth till nearly abreast the west end of the island, where she will have about 6 fathoms in Lankeet roads. This is a convenient place for a vessel to moor when circumstances require her stores or sick to be landed. All the space between Lankeet and Ty-cock-tau is shoal, having in many places only one fathom at low water.

Sam-pan-chau, 三板洲 or Boat islet, bearing N. by E. $\frac{1}{2}$ E. about $1\frac{1}{2}$ mile from the east end of Lankeet, is small, of middling height, resembling a boat turned bottom upwards. An extensive rocky bank, partly above water, projects N.W. from it, and joins the shoal bank extending from Lankeet to Ty-cock-tau. There are regular depths of 7, 8, and 9 fathoms to the eastward of Sam-pan-chau. This islet is the best guide for crossing over Lankeet flat, between the northern part of Lintin bar and Lankeet.

To Hongkong.—If bound to Hongkong in the strength of the South-west monsoon, with the wind steady between S.E. and S.W., endeavour to make the Great Ladrone island bearing about North, then steer between it and the Ky-pong islands, and between Lingting and the Lema islands, for the west Lamma channel. After the middle of August, when easterly winds are likely to prevail several days together, as they are more or less at all seasons, it will be necessary to make the North-east head of the Lema islands, and proceed in by the Lema channel, towards the west Lamma channel. The east Lamma channel is also safe in both monsoons; for although the water is deep, if the wind falls light it is safe to anchor in, and there is little or no tide.*

Hongkong road is generally approached by sailing vessels from the westward, on which side it is protected by Green island and Kellett bank, which extends nearly $1\frac{1}{2}$ mile northward from the latter island, and carries a depth of $3\frac{1}{2}$ fathoms. The road is sometimes approached from the eastward through the Lyemun pass during the North-east monsoon, but the winds are generally baffling under the high land.

When abreast of Green island, if the vessel be of heavy draught, keep the peak of Lamma island (Mount Senhouse, 1,140 feet high) open westward of Green island S. $\frac{1}{2}$ E. until the Devil's peak (on the mainland near Lyemun pass) is in line with the White rock on the south point of Won-chu-chau or Stone-cutters' island, when a S.E. by E. course will lead northward of Kellett bank, and direct for the anchorage. Vessels of proper draught can proceed

* See Chart of Hongkong, No. 1,466; scale, $\frac{1}{2}$ = 2 inches.

over Kellett bank, or through the 4 fathoms channel between Green island and the south part of the bank, by passing about $1\frac{1}{2}$ cable to the northward of the island, and then steering for the roads.

The narrow channel may be taken between Green island and Hongkong, if the wind is fair, and blows *right through*. Many sailing vessels have run through this channel; it has depths of 10 to 12 fathoms in the middle, shoaling to 8, 6, and $4\frac{1}{2}$ fathoms after passing the small islet eastward of Green island.

To Canton River, through Lema, Lantau, and Tai-ta-mi Channels.—The Lema channel, formed by the Lema islands on the south, and by the Pu-toy group on the north, is about 6 miles wide, and safe to navigate, with regular depths of 17 to 19 fathoms, and soft bottom. This channel should, if possible, be always adopted by sailing vessels bound to Hongkong or Canton river in the North-east monsoon, to effect which they ought to make the North-east head of the Lema islands bearing to the westward. If the weather be thick, and the wind blows strong at East or S.E., it may be prudent to heave to, when land cannot be discerned above 3 or 4 miles. The depths are 19 to 21 fathoms, close to the head, and about 18 fathoms at the entrance of the channel. If the weather will not permit a vessel to enter the channel, she should not shoal under 25 or 26 fathoms: in these depths she will drift clear outside of all the islands.

If, however, a vessel should happen to be near the entrance of the Lema channel in the evening, and from the falling of the mercury in the barometer, or by the appearance of the weather, a typhoon is expected, she should run immediately for Tytam bay, or for Ta-thong channel, or the east Lamma channel, as may be most convenient; in either of which she will be secured from the tempest, if an anchorage is gained before night.

During S.W. or westerly winds, it will sometimes be found difficult to enter the Lema channel from the eastward, by turning through, as there is generally a set from West to East, occasioned by the ebb coming from the westward out of the numerous channels, and the flood coming from the S.W.; with a strong S.W. wind the velocity of the stream is about $1\frac{1}{2}$ knot per hour to the eastward, only slackening a little when it ought to change its direction. Pu-toy island may be approached with safety to a quarter of a mile, and the whole north side of the Lema islands to half a mile.

Through Lantau Channel.—From about a mile to the southward of Pu-toy, a West course for 19 miles will lead to the entrance of the Lantau channel, passing northward of Lingting and southward of Lamma, the depth decreasing from 17 fathoms off Pu-toy, to 12 and 13 fathoms after passing Lingting, and to 7 and 8 fathoms as the channel is approached; there are 12 fathoms in mid-channel in the entrance, decreasing to 7 or 8 fathoms towards A-chau. Lingting, which is of considerable height, and terminates at the summit in a conical peak, may be passed on either side as the wind requires. If passing to the southward, give a wide berth to the sunken rocks off its north-west point; and to those off the north-east point to the northward; but the channel to the northward of this island is preferable, for in daylight it has no hidden danger, and a vessel may work from side to side. In the night it will

DIRECTIONS THROUGH LANTAO CHANNEL.

be prudent not to come nearer the north side than $1\frac{1}{2}$ mile, to avoid the two small rocks off its north-east point.

Chi-chau, when seen from the eastward, has a remarkable appearance, and is a good guide; it makes like a high, round, detached island, with distant rugged land to the westward of it, which is Lafsami and Chung-chau. Having entered the Lantao channel, the course through is N.W. by W., and the depth will be variable, not under 8 or 9 fathoms, or above 25 fathoms; this inequality may be owing to the ebb tide running in strong eddies, particularly in July or August, when its velocity is sometimes $4\frac{1}{2}$ knots per hour on the springs. With a light wind, at times, it is very difficult to manage a vessel hereabout; on some occasions two or three boats, assisted by the sails, have been baffled in their attempts to tow the vessel's head around. After passing between Chi-chau and A-chau, the water will deepen from 10 to 17 fathoms in mid-channel near the islands which front the south-west point of Lantao, and there are 7 fathoms close to the point. Having rounded the point at a moderate distance, steer to the northward for Lintin, or to the westward for Macao roads, as circumstances require; in the latter case the depth will gradually decrease to $5\frac{1}{2}$ or 5 fathoms.

In turning through the Lantao channel, when standing northward, do not decrease the depth under 7 fathoms, in a vessel of large draught, nor pass the line of bearing between the south points of Lantao and A-chau. There is a good channel, one mile wide, between the northern Soko island and the Lantao shore, which may be taken by a vessel when blowing fresh from the northward. In this case, after passing the south point of Pa-tung, a small rocky islet will be seen in the bay on the southern shore of Lantao; steer West through this channel, until this islet is shut in behind the western point of the bay, when keep towards the south point of Lantao, and the depth will be $4\frac{1}{2}$ fathoms, muddy bottom, between the point of the sandy spit and the Lantao shore.

From the small islet off the north side of Chung-chau, Lintin bears N. $\frac{1}{2}$ E. 13 miles; the sand-spit extending off the south side of Lintin is on the latter bearing, therefore a vessel will clear it if this islet is kept S. by E. until Lintin peak bears N. by E., then steer for the west point of Lintin. In a dark night, a N.N.W. or N.W. by N. course should be steered from the middle of the Lantao channel until the depths shoal to 6 fathoms, then steer North, keeping a good lookout for the fishing-stakes; on this latter course, if the soundings deepen above 7 fathoms, keep a little westerly until the vessel is near or above Lintin, where she can anchor. By not deepening above 7 fathoms, she will not be too near Lintin sand-spit, there being 9 and 10 fathoms close to it. The ebb tide, from the west end of Lintin to the eastward, sets South; but over on the western shore its direction is S.E.

Through Tai-ta-mi Channel.—If proceeding towards Canton river through the Tai-ta-mi channel, between the Lema and Kypong islands, after clearing the Cambridge rock steer to the northward for Lingting, pass between it and the Sam-moon group, and then proceed through the Lantao channel; or pass between the Sam-moon group and Ai-chau, and then steer for the Lantao channel or to the N.W. direct for Lafsami. Having approached Lafsami, keep within

a mile of its western side, and of the south part of Chung-chau, to avoid the 4-foot needle rock; after passing Chung-chau, steer for Lintin, or for Macao roads.

If the channel be taken between the Great Ladrone and Gap rock, or the narrow passage between the latter and the Kypong islands, steer to northward and proceed along the west sides of Ai-chau and Lafsami. Or if bound into Macao roads, there is a more direct passage about a mile wide, with 13 fathoms water, between Pak-leak and Chuk-wan, then on the north side of Tong-ho and Leung-nip, and to the Southward of Ty-lo, which track lies nearly in a direct line towards the road. Although this channel is safe in the day-time, care must be taken to avoid the Raleigh rock. There is a safe passage between the Great Ladrone and Pak-leak, with 14 to 9 fathoms water in it, but recollect the sunken rock lying half a mile from the north side of the Little Ladrone, and also the Clio rock; a vessel taking this route should pass to the southward of Potoe.

To Canton River through the Great West Channel.—This channel, on the west side of the Ladrone islands, is generally used by vessels bound to Canton during the strength of the South-west monsoon, and to do this they endeavour to fall in with the Great Ladrone bearing about North or N. by E.; but late in the season when the winds incline to the eastward, or at any other time when they are expected to come from the northward or eastward, it will be prudent to make the North-east head of the Lema islands, and proceed towards the river by the Lema and Lantao channels. Here the risk of being horsed to the westward by the fresher setting out of the Great West channel, is avoided, and a northerly wind will lead to an anchorage in the river. When typhoons happen on the coast, they generally commence in a moderate gale from the northward, which is a leading wind for these channels, and as the wind commonly veers to the eastward before it blows hard, a vessel with the first of the gale may get well up the river above Lintin, where these storms blow with less violence than outside among the islands.

As the approach to Canton estuary is probably more safe than that of any other large river in the world, there being no sandbanks at the entrance, and the channels amongst the islands outside being mostly all free from hidden danger, a stranger should not hesitate to push through the nearest convenient channel without a pilot, if the weather is tolerably clear; but the streams must be attended to, as they set in different directions amongst the islands to the south-eastward according to the prevailing winds; a strong easterly wind generally producing a westerly current or tide, which abates in strength when the ebb should be setting to the south-east. If an outside pilot can be obtained at a moderate rate, he may be useful to run the vessel into some place of shelter, if a storm should be approaching, or if she be in a disabled state.

About South 30 miles from the Great Ladrone, the depths increase to 27 or 28 fathoms; about 60 miles from it, to 42 and 44 fathoms; and soundings extend on the same meridian to about lat. 20° N.; from hence they continue westward towards Hainan head; but converge towards the land, with deeper water eastward of the meridian of the Ladrone islands. A vessel falling in with the land in thick weather, may easily distinguish whether it is that of the islands to the eastward of the Great Ladrone, for the Kypong and Lema

DIRECTIONS THROUGH GREAT WESTERN CHANNEL.

islands have soundings of 23 and 24 fathoms close to, whereas the islands between the Great Ladrone and St John to the westward have only 10 and 11 fathoms at a considerable distance outside. These are also large and of regular appearance, resembling a coast more than islands; but those to the eastward are detached, high, and uneven, excepting Tam-kon, the largest of the Lema islands, which is long and of an undulating form.

The freshes out of Canton river set almost constantly from the south end of Montanha, along the shores of the islands to the westward, at the rate of 1 to 2 knots an hour, particularly with strong easterly winds; and although at times there seems to be on the surface a flood tide setting eastward, or into the entrance of the river, the freshes underneath continue to run westward, by which sailing vessels are rendered ungovernable, even in fresh winds. Many vessels from this cause, after getting near Montanha, or between it and Potoe island, have been drifted nearly to St John island, whilst making every endeavour, with moderate winds, to keep their heads to the eastward. Steering, therefore, for the Great West channel, never borrow near San-chau, or the other islands to the westward, unless it is blowing strong from the S.W., to avoid being drifted to the westward. The freshes abate at times, and then weak tides set to the eastward; but as these are not of long duration, a vessel should keep on the eastern side of the channel in deep water towards the Ladrone islands and Potoe, and anchor if she finds the current is drifting her westward.

In the strength of the South-west monsoon, endeavour, if the wind be steady between S.E. and S.W., to make the Great Ladrone bearing about North, and never fall in with the islands to the westward; this is the more necessary after the middle of August, when easterly winds are likely to prevail several days together, as they are, more or less, at all seasons. If a vessel falls to leeward about St John, in September or October, she will generally make a tedious passage to Macao if she keeps close along the islands, where the current or freshes setting westward will oblige her frequently to anchor; as these freshes prevail only in shoal water, near the islands, the best plan to adopt is, to stand well off the land, and take every advantage of the favourable shifts of wind to get to the eastward.

Having arrived abreast of Chung-chau-si, or if the vessel has anchored in Macao roads, with a leading wind she may weigh with the ebb, if she can haul over north-eastward for Lintin; for the tide will then act upon her port bow, and keep her off the western shore: whereas, with an easterly wind, the flood is likely to force the vessel into shoal water near that shore. With a fair wind, steer about N.N.E. $\frac{1}{2}$ E. from Macao roads for Lintin; if it be night, from $4\frac{1}{2}$ to 5 fathoms are good soundings; for at low water springs, greater depths ought not to be expected until several miles north-eastward of the roads.

In turning up with a northerly wind and flood tide, tack from the west side of the channel in about 4 fathoms, according to the vessel's draught, the lead being a safe guide along the western shore, where the bottom generally consists of mud. The islands eastward of Macao roads may be safely approached, having 5 fathoms near them, and when past Chung-chau-si, the depths will increase to 9 and 10 fathoms on the east side the channel, towards Lantao. Working from hence to Lintin in the night, stand to $4\frac{1}{2}$ fathoms in the west part of the

channel, and do not deepen above 7 or $7\frac{1}{2}$ fathoms to the eastward. Here, the tides become stronger as the vessel proceeds upwards.

In Macao roads, and between it and Lintin, the tides are frequently irregular, setting in a different direction at the surface from what they do underneath, by which vessels are rendered ungovernable in light winds. The ebb is stronger, and continues longer than the flood; the freshes often running out below, when a flood tide at the surface is setting into the river.

From Lintin to the Bocca Tigris.—When within 7 miles of Lintin, steer for its west point bearing about N. $\frac{1}{2}$ E., and when abreast the point run to the northward in soundings from 5 to $6\frac{1}{2}$ fathoms: with a westerly wind, borrow on the west side of the channel; if it is easterly keep in 6 to $6\frac{1}{2}$ fathoms with the flood tide. It will be safe to proceed 9 or 12 miles above Lintin, even in the night, with a working wind, the lead being a certain guide, by tacking from the west side of the channel in $4\frac{1}{2}$ fathoms, and from the east side in $6\frac{1}{2}$ fathoms; but when about 6 or 7 miles northward of Lintin, tack in $5\frac{1}{2}$ fathoms from the east side of the channel, for the deepest water is near the edge of Lintin sand, and if a vessel begins to shoal on its verge to 5 fathoms, she will not have room to tack.*

Lantao is frequently obscured by clouds or haze, but when its summit is visible, the west peak of that island affords a good mark for running up this channel in the day. Steering N. by W. or N. by W. $\frac{1}{2}$ W. from the west end of Lintin, draw gradually the high west peak of Lantao on with the west end of Lintin, and continue to bring it more easterly until it is on with Lintin peak, or a little open eastward of that peak, and keep it so, until the vessel is more than half-way from Lintin towards Lankeet. Then, if the wind is contrary, Lantao west peak may be brought nearly to the east end of Lintin, in tacking from the east side of the channel, and well westward of Lintin peak when tacking from the west side; but on a nearer approach to Lankeet, the west peak of Lantao must not be brought westward of Lintin peak.

When within 5 miles of Lankeet, the west peak of Lantao must not be brought more westerly than touching the east end of Lintin, when in the west side of the channel; and to a considerable way open with the same, when on the eastern side. Here the depths decrease, and there is only about a fathom more water in the east side than in the west side of the channel. A narrow mud bank, with $2\frac{1}{2}$ and 2 fathoms at low tide, bounds the west side of the channel in this part, and extends in a N.N.W. direction about 4 miles, terminating nearly $1\frac{1}{2}$ mile to the S.W. of Lankeet. There is a channel of $4\frac{1}{2}$ and 5 fathoms westward of this mud bank, into which or upon the bank the pilots sometimes get vessels in the night; but with those of large draught they are more inclined to borrow close over to the eastward, whereby they have frequently grounded upon Lintin bar; it will therefore be prudent, when the pilot appears confused or uncertain of his position, to anchor before the vessel shoals her water.

From a position about half a mile off the west end of Lintin, a N. by W. $\frac{1}{2}$ W. course would lead fair through the channel, close on the east side of Sam-pan-

* See Charts, Sheets 1 and 2 of Canton River, Nos. 1,732, 1,741; scales, m = $1\frac{1}{2}$ and 3 inches.

CHANNELS THROUGH LINTIN BAY.

chau, were the tides to run in that direction; but from Lintin they set N.N.W. and S.S.E. nearly as far as the north end of Lintin bar, and from thence to Sam-pan-chau about N.W. by W. and S.E. by E.

Steering to the northward, with the west peak of Lantau open a little eastward of Lintin peak, or keeping between $4\frac{1}{2}$ and $5\frac{1}{2}$ fathoms if the weather is cloudy, Lankeet island will be seen making like a saddle, and shortly afterwards two small islets or rocks will appear close to its eastern end. These rocks will be nearly on with the middle of the opening of the Bocca Tigris when first seen, and should not be brought more easterly; nor in working ought they to be brought to touch the point of Tiger island which forms the west side of the opening, until within $4\frac{1}{2}$ miles of Lankeet; being then northward of Lintin bar, a vessel may edge over to the eastward. There is no good cross mark to know when clear of the bar; but a pagoda on the western shore bearing S.W. $\frac{3}{4}$ W. will lead northward of its extremity. From the northern end of the bar, Sam-pan-chau is a little open with Anung-hoy point N.N.W. $\frac{1}{2}$ W., and the little hill on the east end of Lankeet N.W. $\frac{1}{2}$ N., distant about $4\frac{1}{2}$ miles.

Shortly after the rocks off the east end of Lankeet are on with the middle of the opening of Bocca Tigris, or rather more westerly, Sam-pan-chau will be recognized when within 6 or 7 miles of Lankeet, and will then appear under the land, a little eastward of the high round summit of Anung-hoy, a high, round hill, sloping to a point on the west side, and forming the eastern boundary of the Bocca Tigris. Anung-hoy peak in line with Sam-pan-chau hummock, N. by W. $\frac{1}{2}$ W., leads westward of Lintin bar, and eastward of Lankeet spit. With a working wind, keep Sam-pan-chau between the eastern shoulder of Anung-hoy hill and the west point of the same; but that islet must not be opened westward of Anung-hoy point until clear of the north end of Lintin bar.

With an easterly wind, to prevent being set by the tide towards Lankeet, keep on the east side of the channel, with Sam-pan-chau shut in a little eastward of Anung-hoy point, or nearly on with it. When within 4 miles of Lankeet a vessel may stand well to the eastward in working, opening Sam-pan-chau considerably westward of the point, being then to the northward of the extremity of Lintin bar; do not, however, stand so far over as to bring Anung-hoy point to touch Chuen-pe, but tack before they come on, for farther eastward the water is shoal. After opening Sam-pan-chau with Anung-hoy point (which with a westerly wind need not be done until abreast of Lankeet,) steer then direct for the land of Anung-hoy, giving Sam-pan-chau a berth to the westward of half a mile or more at discretion, in 9 or 8 fathoms; the depths from thence will be 9, 8, and 7 fathoms to the entrance of the Bocca Tigris, increasing to 13 and 15 fathoms abreast South Wangtong.

If, in a vessel of small draught, a cast of $3\frac{1}{2}$ or 4 fathoms hard ground be got before Lankeet is seen, in a clear night, she may be certain of its being on Lintin sand, and will deepen fast on hauling westward into the channel.

To Canton River through Fan-siak Channel.—It would be imprudent to attempt the channel on the east side of Lintin in a vessel drawing 23 feet water, being very narrow just above and about Tree island, with a considerable swell in it when blowing strong from the northward. The southern

part of the channel between the White rock and the east side of Lintin south spit is about 2 miles wide, with 7 and 8 fathoms, decreasing towards the spit to 5 fathoms. In working to the northward, do not stand so far west as to shoal to 5 fathoms, or to bring the east side of Lintin to bear North of N. by W. When northward of Tong-ku, if the vessel is of 20 or 21 feet draught, keep the eastern shore aboard, avoiding the spits of shoal water at the points of the islands until off the north end of Mah-chau, the shoal off the south end of which will be avoided by not shutting Tree island in with Mah-chau, or by not bringing the highest peak of Mah-chau westward of N. $\frac{1}{2}$ W., when the White rock is in one with the north end of Fan-siak, which is the mark for the south end of Mah-chau spit.

From hence to Tree island, when standing towards Lintin bar or Fan-siak bank, keep the lead going, and tack in 4 fathoms or less, according to the vessel's draught; but the lead will be the best guide, as the bank is much curved in shape. Standing to the eastward, do not bring the north or highest peak of Mah-chau to the westward of South, and when the South point of Sui-chau bears N.E. $\frac{1}{2}$ N. do not bring the tree on Tree island to the westward of N. by W. $\frac{1}{2}$ W., to avoid the shoal spit of 2 or 3 fathoms, which extends S.S.E. from that island nearly a mile. When thus far, endeavour to pass between Tree island and the fishing-stakes No. 1, placed near it; this island is safe to approach close to the rocks, but on the Channel banks, on the western side of these stakes, the water shoals suddenly to 2 $\frac{1}{2}$ fathoms, irregular soundings, sand and mud.

Being close to the west end of Tree island, do not bring the tree to bear more to the southward than S.E. $\frac{1}{2}$ E., this bearing being close on the edge of the shore bank. Standing to the westward, do not bring the White rock off Fan-siak to the eastward of the saddle on the east end of Lintin, or the east end of the fishing-stakes No. 3, to the northward of N.W. by N., the lead not being a sufficient guide for the Channel banks. If the fishing-stakes be not removed, they appear to be a preferable guide to the landmark, being always discernible, but either may be used in clear weather. When within half a mile of the stakes No. 3, the passage becomes wider, extending from the shore bank to Lintin bar, with 4, 4 $\frac{1}{2}$, and 4 $\frac{3}{4}$ fathoms in it at low water, shoaling gradually on either side, so as to render the lead a guide in tacking, the bottom being very soft mud.

If close to Tree island with a leading wind, steer direct for the centre of the fishing-stakes No. 3, and pass them on either side, as circumstances require.

There is another range of fishing-stakes (numbered 4) bearing S.W. $\frac{1}{2}$ W. of No. 3, which will, when near them and bearing South, warn a vessel of her proximity to Lintin bar.

If the vessel is under 20 feet draught, a wider range may be taken, but she ought, if possible, to follow the above directions, and at any rate pass between Tree island and the fishing-stakes No. 1, or close to their western end, and avoid the Channel banks. If drawing 17 feet or under, she may pass up or down any part of the channel, keeping to the eastward of Fan-siak, well over towards Mah-chau, avoiding the shoal spits which project from the ends of the islands.

Tides.—It is high water, full and change, in the Fan-siak channel at 1h. 0m., but the rise is irregular, especially on the neaps, the rise and fall being then only $2\frac{1}{2}$ to 3 feet, and from 6 to $8\frac{1}{2}$ feet on the springs; velocity from 3 to 4 knots, and from 2 to $2\frac{1}{2}$ knots on the neaps.

CANTON RIVER.

The entrance to Canton river or Chu-kiang 珠江 i. e. Pearl River, is formed between Ty-cock-tau and Anung-hoy; the whole is named Bocca Tigris or Tiger's mouth, same as Fu-moon 虎門 in Chinese. It is divided into two channels by the Wangtong islands; that to the eastward of the islands is generally used by vessels of large draught; that to the westward is called Bremer channel by foreigners.

Chuen-pe Point.—The south extreme of Chuen-pe 穿鼻 island is close to a small peak called Chuen-pe hill, and N.N.E. $\frac{1}{4}$ E. $1\frac{1}{2}$ mile from Sam-pan-chau. On the north-west point of Chuen-pe there is a small watch-turret, with a fort under it on the north-west side; and midway between this point and Chuen-pe point there is a ledge, named Pratt rock, lying a quarter of a mile off shore, with from 6 to 9 fathoms close outside.

Anson Bay, between Chuen-pe and Anung-hoy islands, is very shoal; from the depth of 5 or 6 fathoms the soundings suddenly decrease to 2 fathoms within a line joining the north-west point of Chuen-pe and Anung-hoy point, affording only a harbour for junks; there is a Chinese naval station here.

Bower Point, the south-east extreme of the island of Ty-cock-tau, forms the western point of entrance to Canton river. From this point to Sam-pan-chau, the west side of Chuen-pe channel is bordered by a shoal flat, over which boats can only pass to East and West Ow-chau, the two small islets lying southward of the point.

Anung-hoy Point or A-neung-hai, 亞娘鞋 (called Nam-shan 南山 or South hill by the pilots, for the fort is only known as Anung-hoy,) the south-west point of Anung-hoy island, bears N. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from Bower point on Ty-cock-tau, at the western side of the passage, and N.W. $\frac{1}{2}$ N. 3 miles from Chuen-pe fort, and with Keshen point half a mile to the north-west, forms the eastern side of the Bocca Tigris. The principal fortifications for defending the strait are built on this face of Anung-hoy, and Anung-hoy peak rises immediately behind them to the height of 1,600 feet.

Wangtong Islands.—North and South Wangtong 橫檔 are two small islands lying nearly in mid-channel abreast Anung-hoy point. They bear N.N.W. and S.S.E. from each other, distant a third of a mile apart, and are surrounded by a bank which extends $1\frac{1}{2}$ mile in a S.E. by S. direction from the southernmost island, at which distance the depth is only 4 fathoms.

Directions.—From abreast Sam-pan-chau with a leading wind a N.W. by N. course for $4\frac{1}{2}$ miles will lead to the entrance of the Bocca Tigris; but with a turning wind be careful, when standing towards Chuen-pe, not to borrow too close to Pratt rock. When standing westward towards the shoal flat

extending south-eastward of South Wangtong, tack before the eastern extreme of Tiger island touches the eastern part of the fort in North Wangtong.

The Bocca Tigris has deep water and uneven bottom, and is much contracted by the Chain rock, above water, lying E.S.E. a quarter of a mile from the east point of North Wangtong; and although the passage between it and Anung-hoy point is too narrow for working a large vessel, she can always back and fill through with the tide. The tide runs strong through in eddies, and vessels generally keep nearest the eastern shore in passing.

The Bremer channel, to the westward of the Wangtong islands, carries a depth of 10 to 5½ fathoms. If intending to use this channel, the first village seen to the northward of Bower point open south of the first bluff point above Ty-kok-tau fort (this latter point has the appearance of an island,) will lead to the southward of the south extreme of the shoal flat off South Wangtong; and the east extreme of Tiger island just open to the westward of the west end of South Wangtong will lead along its western edge in 5 fathoms. When abreast North Wangtong, about 1½ cable's length from its west point, steer about North to avoid the shoal flat on the western shore.

Duff Rock.—This dangerous pointed rock, with only 18 feet over it, lies about N.N.W. ½ W. nearly a mile from the eastern end of North Wangtong. It has 7 to 9 fathoms around it at low water, and from it the small round hummock on the western part of South Wangtong is seen over the western slope of North Wangtong, between the small redoubt with a tree on it and the point; and the high land of Gee-fou 二虎 or E-fu island is touching the western brow of Tiger island. A vessel will pass eastward of this rock by not bringing Sam-pan-chau to touch the east end of North Wangtong, until she has approached Tiger island so near as not to see the high land of Gee-fou to the westward of it.

Tiger Island or Tai-fu, 大虎.—N.W. ¼ N. 1½ mile from the east end of North Wangtong is the Tiger's Claw, the south-east extreme of a remarkable high island, Tai-fu, or Tiger island, the summit of which appears cleft. A shoal extends to the south-east from the Claw, and at the distance of a quarter of a mile the depth is only 3½ fathoms. There is a fort on the north-east side of the island.

Bate Rock, with only 14 feet on it, lies 2 cables to the northward of the north extreme of Tiger island, with the fort on that island bearing S.E. ¼ S.; the highest part of the island (eastern summit) S. ¾ E.; and the north-west extreme of the island nearly in line with a small granite boulder on the summit of the hill on the western shore of the river S.W. ¾ W. It is steep-to, having 10 fathoms water, mud, close to the eastward, and 7 fathoms between it and the island. To pass outside or to the north-east of the rock, keep the east extreme of North Wangtong open of Tiger island fort.

Towling Flat.—About a third of a mile to the eastward of the fort on Tiger island is a projecting point of the Towling flat. Both this flat and sand have extended considerably to the westward since 1840, and the sand is now an island covered with vegetation, and never wholly under water even at the highest tides. The old mark for the western edge of the flat in 3 fathoms

was Tomb point (the next point north-west of Chuen-pe point) in line with Keshen point S.E. $\frac{1}{2}$ S.; but Tomb point must now be kept well open in passing the flat.

Vessels turning to windward from the Bocca Tigris towards Tiger island may stand to the eastward, and shut in the high land of Chuen-pe with Anung-hoy until abreast the south-east point of Tiger island. If of large draught, they had better back and fill, between the island and the flat, as the tides are strong.

The Small Bar is the name given, in 1815, to a small $2\frac{1}{2}$ fathoms bank of hard ground lying nearly in mid-channel, about $4\frac{1}{2}$ miles northward of Tiger island. Since that period the bank appears to have grown up and extended at least half a mile further south. When surveyed in 1857, it was a mile in extent, north and south, and near its centre, west two-thirds of a mile from Blake point, a patch was found with only 10 feet on it; the depths on the other parts of the bank were 2 to 3 fathoms. The *Calcutta* grounded on this bank in November, 1856. When upon it, Gee-fou rock, off the east end of Gee-fou island, bore South 4 miles; Saw-shee hill E. $\frac{1}{2}$ S., and Second Bar pagoda N.W. by N.

Second Bar or Ho-tun-tseen 螺墩淺—The channel for vessels of large draught becomes very narrow abreast a large inlet on the eastern shore of the river, called Second Bar creek, the entrance to which bears S. E. by E. $\frac{1}{4}$ E. from the Second Bar pagoda or 浮蓮塔 Fau-lien-tap. The southern part of the Second bar begins at a third of a mile from the shore abreast a small creek immediately southward of Second Bar creek; from thence the bar extends $2\frac{1}{2}$ miles in a N. by W. $\frac{1}{2}$ W. direction, and carries 9 to 16 feet at low tide.

First Bar, or Tai-ho, 大螺 nearly 7 miles above the Second bar, is formed between a shoal bank of sand bordering the south side of First Bar island, and a shoal spit projecting from the eastern point of the low Flat islands. The least depth on it in 1857 was 20 feet.

Brunswick Patches, or Yu-tau-shak, 魚頭石 lie about two-thirds of a mile above the west end of First Bar island, on the northern shore of the river. The rock on which the *Brunswick* struck is described to be about half a cable long, in a N.E. by E. and S.W. by W. direction, with irregular depths of 8 to 18 feet on it at low water. When upon it, the Second bar pagoda bore S. by E. $\frac{1}{4}$ E.; South Chop-house S.S.E. $\frac{1}{4}$ E.; Whampoa pagoda W $\frac{1}{4}$ N.; west extreme of First bar island S.E. $\frac{1}{4}$ E.; and a large house inland N. $\frac{1}{4}$ W.; and with this house bearing from N. $\frac{1}{4}$ W. to N. by E. a vessel will be in the line of the rock. There are channels between the patches, and to the southward of them, but in the absence of leading marks the narrow 4-fathoms channel to the northward of patches, close along the north shore, is the most generally used.

Tides.—At Whampoa, it was high water, full and change, in the month of March at 1h. 40m.; in April, at 1h. 15m.; and in May and June, at 0h. 30m.; and the rise at springs was 7 or 8 feet. In March the day and night tides rose to the same level. From April to October the day tides were the higher, and

from November to February the lower. In May and June, spring tides rose 4 feet, and the neaps 2 feet higher than in March.

Directions.—Having entered Canton river by the Bocca Tigris, be careful when approaching the Duff rock not to bring Sam-pan-chau to touch the east end of North Wongtong, until the high land of Gee-fou island is shut in with the western part of Tiger island. In passing through the channel between the latter island and Towling flat, observe that Tomb point, on Chuen-pe island, kept well open of Anung-hoy north fort, will lead westward of the western edge of the flat; and that the eastern end of North Wangtong kept open of the fort on Tiger island will lead north-east of Bate rock.

After passing Tiger island, keep the watch-tower on Chuen-pe fort open of Anung-hoy north fort, until Bower point, the east extreme of Ty-cock-tau, is in line with the eastern side of Tiger island; then steer up the river with this latter mark on, and it will lead in the deepest part of the channel, but nearest to Towling island in 7 or 8 fathoms water. This mark will not answer much farther than to bring the remarkable high part of Gee-fou island on with the highest land to the westward, or bearing S.W., but keep more eastward, and open Bower point again. From thence steer to the northward, pass on either side of the Small bar, and attend to the soundings on the chart.

There are two fairway marks for crossing the Second bar—one, the west point of Tiger island in line with Grassy Tongue bearing S. by E. easterly, leading through the western channel, and the other, Wangtong tower in one with the grassy edge of the land at Amherst point about S. by E. $\frac{1}{2}$ E., leading through the eastern channel, which is the route generally taken; but the services of a pilot are here indispensable to a vessel of 20 feet draught, without the channel be previously buoyed, for the knolls or shoal patches being formed of sand and gravel mixed with mud, are liable to alter their position by the freshes of the river and the spring tides, which also render the navigable channel changeable. Vessels often ground and lie in a dangerous state for a tide; and this often proceeds from two or three pushing over together, as there is no time to be lost after the water has risen sufficiently for a vessel drawing 23 or 24 feet to pass over.

Vessels of large draught proceeding up the river from an anchorage below the Second bar in the North-east monsoon, or with a weather tide, should be under-weigh by the last quarter flood, to save the tide across the bar; for the channel between the knolls being very narrow, they must back and fill through: if of moderate draught they may weigh earlier. The difficulty in crossing the bar is in ascertaining correctly the shoal patches on either side the channel, and it will be best to place the boats on them at the first of the flood. When the Second bar pagoda bears W. by S., the bar is crossed, and the bottom will be soft and loose, unlike that on the bar, which is in parts hard and stony.

After passing the Second bar, keep between a third and half a mile from the eastern shore until First Bar island is approached, when the river begins to be contracted, and requires great caution. When Whampoa pagoda is observed just on with the northernmost clump or hill on Dane's island, haul out more into the middle of the river to avoid the shoal ground off the south side of First Bar island.

ANCHORAGE AT WHAMPOA.

As no safe marks can be given for leading towards the First bar, between First Bar island and the easternmost of the Flat islands, it will be prudent for a stranger, without a pilot, to buoy the south-east extreme of the spit extending off the eastern Flat island, and also the Brunswick patches. The best route appears to be, when the South Chop-house on the southern shore of the river bears S.S.W., to haul over to First Bar island to avoid the spit, and then steer in about N.W. $\frac{1}{4}$ N., passing about a cable's length along the western face of the island. When Whampoa pagoda is seen clear to the northward of the Flat islands, steer for the northern shore, which must be skirted at about half a cable's length, passing through the narrow 4 fathoms channel northward of the Brunswick patches.

As the northern patch is approached, or when the large house inland bears about N. by W., be careful in preserving the distance of half a cable from the shore, and when the house bears eastward of N. by E. the danger will be passed. From thence steer towards Whampoa through Cambridge reach, borrowing towards the northern shore.

CHAPTER III.

EAST COAST OF CHINA—HONGKONG TO AMOY.

VARIATION FROM 0° 30' EAST TO 0° 15' WEST IN 1861.

Ta-thong' or Ta-tung-mun 大東門 Channel, is formed between the west side of Tamtu island and the east side of Hongkong, and close to the latter, about $1\frac{1}{4}$ mile northward of Tylong head, lie two small rocky islets; between these islets and Ta-thong point is the Ta-thong rock, above water.

Vessels having run out from Hongkong roads through the Lyemun pass, and wishing for anchorage, either for the night, or in consequence of bad weather, will find a good berth in the bay on the northern side of Tamtu island in 6 fathoms; but it must be borne in mind that the water shoals to $2\frac{1}{2}$ fathoms at 3 cables' lengths from the joss-house on the North side of the bay.*

Tamtu or Tunglung Island, 820 feet above the sea and 3 miles in circumference, is separated from the mainland by a channel called the Fo-tau-mun or Fuh-tang-mun 佛堂門 pass, which is only $1\frac{1}{4}$ cable wide between the rocks which lie off both points in the channel, and carries a depth of 3 fathoms. A sunken rock lies S.E. $\frac{1}{4}$ E. distant 4 cables from the north point of Tamtu; when on it, the west end of Steep island (the first small islet to the north-eastward) just shows clear of a remarkable headland named Yih bluff, bearing N.N.E. $\frac{1}{4}$ E.

The south point of Tamtu forms a low peninsula, and to the southward of its west point there is a flat islet or rock lying a cable's length from the shore, with reefs inside it. Upon the first point outside the Fo-tau-mun pass stands a ruined fort.

Steep and Trio Islets.—Steep islet is $1\frac{1}{4}$ mile to the northward of the eastern entrance of the Fo-tau-mun pass, and 4 cables from the shore; at $1\frac{1}{2}$ mile farther north lie the Trio islets. There is an indentation in the coast, with 8 fathoms water, between Trio and Steep, but it is exposed to easterly winds and swell.

Ninepin Group lies 3 miles eastward of the Fo-tau-mun pass; the two largest islets bear North and South of each other, and the channel between them is 2 cables wide. The southern face of the South Ninepin is a precipitous cliff, 330 feet high; off its south-west side there is a smaller islet, and towards its northern point the land becomes lower, with a peaked rock in the offing. The surface of the North Ninepin is nearly of the same elevation, with the exception of a cleft near its northern end; an islet lies off its south-west extreme.

* See Charts: —Hongkong, No. 1,466, scale $m = 2$ inches; Sheet 2, East Coast of China, No. 1,962, scale $d = 1\frac{1}{4}$ inches; and Miso Bay, No. 1,964, scale $m = 0.8$ of an inch.

Ninepin Rock, or East Ninepin, 222 feet high, lies nearly a mile eastward of the North Ninepin, and assumes the appearance that its name indicates only when seen in a N.W. or S.E. direction; otherwise the name is liable to mislead. Close to its north-west side is a smaller islet, and there are detached rocks upon its north-east and west sides.

One-foot Rock, lying S. $\frac{3}{4}$ W., not quite 7 cables from the Ninepin, has only a foot over it at low water. When on this rock the south end of the South Ninepin bears W. $\frac{1}{4}$ S., and is in line with the shoulder of the hill northward of the highest part of Tamtu; and the right extreme of the rock on the north side of the North Ninepin is in line with the summit of Shelter island in Shelter bay, N.W. $\frac{1}{4}$ W. The south end of the South Ninepin on with Fo-tau-mun pass, W. $\frac{3}{4}$ N., will lead south of it.

North Rock, lying N.W. $\frac{1}{4}$ N. distant 9 cables from the Ninepin, is nearly awash; a reef, which breaks at low water, lies a short cable's length to the south-east of it.

Tides.—At the Ninepin group it is high water, full and change, at 10h. 0m., and the rise is 5 feet. The channel between the group and Steep islet is nearly 2 miles wide, and carries a depth of 14 to 16 fathoms.

Port Shelter.—To the northward of the Ninepin group the mainland forms a deep bay, containing Port Shelter and Rocky harbour. Port Shelter, the western of the two, runs back to the northward $5\frac{1}{2}$ miles, and its head is separated from the south-west portion of Mirs bay by an isthmus $1\frac{1}{4}$ mile wide, overlooked by the Hunchback hills, 2,315 feet above the sea, which, with Sharp peak, 1,540 feet high, on the west side of the entrance to Mirs bay, form conspicuous marks by which this portion of the coast may be recognized.

When steering for Port Shelter, pass eastward of Trio and Table islets on account of some rocks which extend 3 cables from the point to the westward of them. Nearly a mile northward of Table islet is the southern point of Jin island, with a peaked rock lying 2 cables to the southward of it; and E. $\frac{3}{4}$ N. rather more than a cable's length from the peaked rock, there is a rock awash at high water.

Shelter island, $1\frac{1}{4}$ mile to the north-west of Table islet, should likewise be left to the westward when steering for Port Shelter, as the ground is foul between it and the main. Good anchorage will be found on the north-west side of Shelter island, in 8 fathoms, but give the north point of the island a berth of a cable's length, and avoid the Nine feet patch, which lies 6 cables to the northward in the centre of the bay; the marks for which are:—Table island on with the north end of North Ninepin, bearing S.E. $\frac{3}{4}$ S.; the opening between Keui and Jin islands nearly East; and Shelter island S. by W. Southerly, one cable's length from the west point of Shelter island is a rock awash at low water; and there is a patch of $2\frac{3}{4}$ fathoms lying half a mile to the westward of it.

Sharp island lies North $1\frac{1}{4}$ mile from Shelter, with fair anchorage on its eastern side, but exposed to southerly winds; and from which, passing north of Keui island, there is a junk or boat passage leading into Rocky harbour.

Rocky Harbour is formed by Keui and Jin islands on the west, and by

High, Basalt, and Bluff islands to the east and south-east. The southern entrance between Bluff and Jin islands is a mile wide; the rock awash at high water off the latter has been mentioned above. On the east side of Jin, at 2 cables from the shore, is Bay islet, which is low and flat.

Three-foot Patch.—Midway between Bay islet and the north of end of Bluff island lies a rocky patch with only 3 feet on it, from which the west point of Bluff island is in one with the summit of North Ninepin, S. $\frac{1}{2}$ E., and the southern summit of Bay islet bears W.N.W. The north Ninepin and Bluff islands touching, leads westward of it; and the west end of the rock lying off the south-west end of North Ninepin, in one with the west point of Bluff island, leads eastward; also, a vessel will be northward of it when the Pyramid rock opens clear of the north-east extreme of Bluff island, S.E. by E. $\frac{1}{2}$ E.

Three-fathoms Patch lies 6 cables to the northward of the Three-foot patch, with the summit of Bay islet bearing W.S.W., Pyramid rock S.E. $\frac{1}{2}$ S., and Green islet, the small islet on the eastern shore, E. $\frac{1}{2}$ N., and distant 3 cables' lengths.

Anchorage will be found in the North-east monsoon on the eastern side of Rocky harbour, in the neighbourhood of a small cove northward of Green islet, where there is a mandarin station and a village. Inside the cove the depth is 6 fathoms, but the space is confined, owing to sunken rocks. In the South-west monsoon vessels will be better sheltered by anchoring to the north-west of Bay islet.

Basalt Island lies 4 cables to the south-east of Bluff island, and the depth between them is 5 fathoms at low water. The former is 8 cables long, north and south, and rises to the height of 572 feet above the sea; the southern faces of both it and Bluff island are very precipitous.

Town Island lies half a mile to the northward of Basalt island. The channel between them is 4 cables wide, but it should not be used without a leading wind or in a handy vessel, as the chow-chow water* or whirling eddies might lead them into difficulty. It is also obstructed by islets and a rock awash at high water; and to the eastward of the Three-foot patch, at the entrance of Rocky harbour, the ground is foul with some casts of 3 fathoms.

High Island, $7\frac{1}{2}$ miles in circumference and 910 feet above the sea, is separated from Town island by a channel which carries a depth of $3\frac{1}{2}$ fathoms, but in some places it is barely a cable wide. At $1\frac{1}{2}$ cable eastward of the latter is Hole island, so called from its being perforated. To the northward of these islands there are two low islets. The channel between High island and the main has not more than a foot at low water in some places.

Fung Bay.—Conic isle lies N.N.E. $2\frac{1}{2}$ miles from Hole island, at not quite a cable's length from the shore, and immediately westward of it is a small bay $3\frac{1}{2}$ cables wide and three-quarters of a mile deep, which might be used in the North-east monsoon. Fung bay, the next inlet to the northward, is $1\frac{1}{2}$ mile wide, and has two islets and a rock in the middle of it; but it is too much ex-

* Chow-chow water is a term used in the jargon of the native pilots, applied to those rippings occasioned by the meeting of adverse currents, the agitation of which is frequently so violent as to render a vessel unmanageable when within their influence.

posed to the eastward to be of any use to the navigator. Sharp peak, noticed in page 41, overlooks this bay, and bears from the Ninepin N. $\frac{1}{4}$ E., nearly 10 miles.

Mirs Bay or Tai-pang-hai, 大鵬海 is a deep inlet, 15 miles to the north-east of Hongkong; entrance, between Fung head and Mirs point, is $5\frac{1}{2}$ miles wide; its extent northerly is 11 miles, and in an east and west direction 18 miles. Gau-tau, a rocky islet 90 feet high, lies about 2 miles within the entrance, and S.W. by W. about half a mile from it is a rocky ledge, part of which is always uncovered. South Gau island, 96 feet high, is $1\frac{1}{2}$ mile to the S.W. by W. of this ledge, and half a mile off shore. The hills near Mirs point rise to the height of 1,200 feet, and just off its southern extremity lies a small islet, named Griffin rock, and east of it some rocks, at a cable's length from the beach. The first point to the westward of the islet is perforated.

Grass Island.—The point $1\frac{1}{2}$ mile N. by W. of Fung head has two islets off it, and from thence the western coast of Mirs bay trends suddenly to the westward, then northerly $1\frac{1}{2}$ miles, where there is an opening 3 cables wide leading into Long harbour, bearing West from Gau-tau; the navigable channel however has only 2 fathoms water in it, and is barely a cable wide, with shoal water extending from both shores.

On the north side of the opening lies Grass island, which is $1\frac{1}{2}$ miles long, north and south, three-quarters of a mile wide, and 420 feet high; and at $3\frac{1}{2}$ cables eastward of this island is a large black rock, named North Gau, with a reef, awash at high water, lying N.W. $\frac{1}{2}$ N. 4 cables from it.

Port Island, nearly 2 miles in circumference and 420 feet high, lies nearly 6 cables northward of Grass island, and its north-east point, which is narrow, projects 3 cables from the body of the island.

Long Harbour, the entrance to which lies a mile S.S.W. of Port island, is $3\frac{1}{2}$ miles deep, and at its entrance is 6 cables wide. Both shores are steep-to, with the exception of the south-west end of Grass island, where there is a cove with a rock off its north point; and at about a cable's length to the northward of this rock and half a cable from the shore is a rocky patch of $3\frac{1}{2}$ fathoms; some rocks also, which show at low tide, extend nearly a cable's length from high water mark at the south-west end of the island. To the southward of Grass island, the harbour widens to $1\frac{1}{2}$ mile, and then gradually decreases towards its southern extremity, where it is separated into two coves; the depth is 4 fathoms at a mile from the head of the harbour.

Jones Cove, the next inlet westward of Long harbour, is a mile deep, N.N.E. and S.S.W., and 3 cables wide; but it, as well as Long harbour, is open to a considerable swell from the N.N.E.

On the western side of the cove there are three islets, and at 2 cables to the northward of the largest (Flat islet), are two rocks, awash at high water, from which the summit of Port island bears N.E. $\frac{2}{3}$ E., and the north point of Grass island E. $\frac{1}{2}$ N.

Tolo Channel, leading into Tolo harbour, is the next deep inlet westward of Long harbour, on the western shore of Mirs bay. The entrance, between

Port island and Bluff head, is nearly $1\frac{1}{2}$ mile wide, and from thence the channel trends S.W. by W. 7 miles to White head, forming a Sound not less than 7 cables wide, with steep shores, and carrying a depth varying from 6 to 14 fathoms. There is a small cove on the northern shore of the channel, at 2 miles within Bluff head.

Within the channel, at $3\frac{1}{2}$ miles from Bluff head, is Knob reef, and a flat reef at 2 cables' length further to the S.W. ; and $2\frac{1}{2}$ miles further lies Bush reef, north of which, $3\frac{1}{2}$ cables, is Harbour island. The mainland to the southward is nearly a mile distant from this latter reef, but the 3-fathoms' line extends 4 cables from the shore on this side of the channel. Although there is a navigable channel on either side of these reefs, the one northward of them is preferred, being the wider, and having 7 to 10 fathoms water. Abreast of Knob reef, on the northern shore, there is a large cove.

Tide Cove.—At White head, (which is a peninsula with the Hunchback hills, 2,315 feet high, with very precipitous face, rising immediately behind it,) the Tolo channel separates into three arms, the south-western of which, named Tide cove, extends $3\frac{1}{2}$ miles beyond it, and the water shoals gradually from 5 fathoms to the bottom of the cove, from whence there is a footpath to Kowloon village in Hongkong harbour, the distance across from water to water being $2\frac{1}{2}$ miles, and the greatest elevation to surmount 920 feet. In the middle of the cove, at 2 miles from White Head, is a reef which covers at high water, and from which a remarkable waterfall on the western shore bears S.W. by W. $\frac{1}{2}$ W.

Tolo Harbour, the north-west arm, also extends $3\frac{1}{2}$ miles from White head, and has in its entrance Centre isle, and to the northward some smaller islets, with anchorage between them and the main.

Plover Cove, the north-east arm, would in all probability be found the most eligible place to ride out a typhoon ; it runs back $2\frac{1}{2}$ miles to the eastward beyond Harbour island, and carries a depth of 6 to 4 fathoms.

Round, Crooked, Crescent, and Double Islands.—N.W.b.N. $2\frac{1}{2}$ miles from Port island, is Round islet, the easternmost of an extensive group lying in the north-west part of Mira bay ; the largest of the group are Double, Crescent, and Crooked islands. Double island, the southernmost, lies N.W. 6 cables from Bluff head, and the channel which separates its south-west point from the main is only large enough for boats. The passage between it and Crescent island is a cable wide, with 4 to 7 fathoms in it ; and between Crescent and Crooked islands, the narrowest part of the channel is 2 cables wide, with a depth of 10 and 12 fathoms.

The east end of Crooked island is a remarkable peaked head, and between it and the mainland, to the northward, the depths are 9 to 4 fathoms, muddy bottom. A good harbour, Crooked harbour, will be found on the west side of Crooked island ; and a very secure basin, named Double Haven, is formed to the southward, by Crescent and Double island, the entrance into which on the north side is 3 cables wide : within it the depth is 7 fathoms. On the north-west side of Crooked island is a large village.

Peng-chau Island, 3 miles in circumference and 148 feet high, is in the

north-east corner of Mirs bay, and bears N. $\frac{1}{2}$ E. $4\frac{1}{2}$ miles from Gau-tau. The geological formation of this island is totally different from the adjacent land, being alluvial, shale stones forming its beaches. The distance between it and the mainland to the eastward is rather more than a mile, forming a convenient harbour sheltered from all winds. E.N.E. from this island is the remarkable peak of East Cone, 750 feet high, overlooking Typung bay, the distance across being $1\frac{1}{2}$ mile, and the land but little elevated. The village of Namoh stands on the isthmus; and in the bay to the south-west of it there is a peaked rock, and a sunken reef.

Anchorage.—The water gradually shoals to the westward of Crooked island, and this part of Mirs bay affords good anchorage. The northern portion of the shores of the bay are steep-to. There is anchorage in the North-east monsoon all along the eastern shore of the bay to the southward of Peng-chau; but the number of fishing platforms on stakes in 8 and 9 fathoms water render the navigation awkward in the dark. There is anchorage in south-west winds to the westward of the South Gau, in 8 or 9 fathoms.

Tides.—It is high water, full and change, in Tide cove, on the western shore of Mirs bay, at 10h. 0m., and springs rise about $6\frac{1}{2}$ feet; but during the neaps the water remains nearly at the same level.

Off Mirs point in April, two days after the change of the moon, the ebb made to the E. by N., the greatest velocity being 0.3 of a knot per hour. With the flood, there is a great indraft into Mirs bay and Rocky harbour, which must be guarded against in shaping a course from Tu-niang island to pass outside the Ninepin.

On full and change in May, the flood inside the Ninepin rock ran to the S.E., and the ebb to the S.W., the former at the rate of 0.3 of a knot, the latter $\frac{1}{2}$ a knot per hour. In March, the moon being 19 days old, the ebb ran to the S.W. 2 knots, 9 miles in the whole tide.

The Coast from Mirs point trends N.E. by E. 8 miles to Teyih point, and between the points there are two sandy bays, off the westernmost of which, and at 4 cables from the shore, lies Coast islet, having 4 fathoms inside it.

Directions.—As the ebb stream runs to the southward along the western shore at the entrance of Mirs bay, a vessel working to windward with a S.W. wind will get to the westward speedily by keeping near it, passing between the Ninepin group and Tamtu; but as soon as the Lema channel opens out, she will meet with a strong set to the eastward.

During the month of August and part of September, if a vessel is to eastward of the Lema islands, she will find it difficult to proceed along shore to the westward if the wind is from that quarter; she ought therefore either to stand off to the southward for two or three days, if near the full and change of the moon, when bad weather may be apprehended, or anchor in Mirs or Harlem bay for an easterly wind, which in these months usually happens every few days, close in with the coast.

Tu-niang Group, or To-ning, 沱寧 lying 6 miles eastward of Mirs point, fronting the peninsula which separates Mirs and Bias bays, consists of eight islets, including Single island (called 專洲 Chune-chau,) and A-cong rock. The largest islet, the northernmost, is 5 miles in circumference, and the

summit rises like a cone to the height of 960 feet; off its western end are two islets; the nearest, Net island, is sugar-loaf shaped, and at low tide there is but a foot of water between it and Tu-niang.

Peak rock, lying a quarter of a mile westward of Net island, with a depth of 4 and 5 fathoms between, appears like two islets with a shingle beach connecting them. N.W. $\frac{1}{2}$ W., 4 cables from Peak rock lies a ledge of rocks, the northern edge of which is always visible; and between them is a reef which breaks at low water.

Immediately to the southward of Tu-niang island lie three islets, called Sam-mun 三門 (or Three Passages,) which form a harbour sheltered from all winds, except those between W.N.W., round westerly, and S.W. by S. The southern islet is 3 miles in circumference, and distant $1\frac{1}{2}$ miles from Tu-niang; the channel between it and Cone island to the northward is not quite 2 cables wide, with a depth in it of 9 and 10 fathoms. The passage between Cone and Tu-niang is the same breadth, but crooked, and carries only $2\frac{1}{2}$ fathoms at low water. The channel between Sam-mun and Single island is $1\frac{1}{2}$ mile wide; the latter island is even-topped, and 200 feet high.

The A-cong is a remarkable pyramid rock lying 6 cables to the N.E. of Single island, with a depth of 15 fathoms between them. There is a rock with 16 feet upon it at low water, lying N.N.E. $\frac{3}{4}$ E. about a mile from A-cong, on which bearing it is on with the south-east point of Single island. When on this rock, which is so steep all around that there was great difficulty in finding it, Cone island bore N.W. by W. $\frac{3}{4}$ W., and was in one with a remarkable gap in Tu-niang.

Anchorage.—In the North-east monsoon the trading junks anchor in 9 fathoms to the southward of Net island, and abreast a fort on Tu-niang; but the ground is foul within 2 cables' lengths of the fort point. The best anchorage is off the south-west point of Cone island in 7 and 8 fathoms water. During the prevalence of south-westerly winds there is anchorage, in 9 and 10 fathoms, abreast a bay on the north-east side of Tu-niang.

Middle Rocks.—N.E. $\frac{1}{2}$ E. from the summit of Tu-niang lie the Middle rocks, which are just awash at high water. From them Acong rock bears S. $\frac{3}{4}$ W.; Bate island, off the east point of Bias bay, N.N.E.; and Lokaup island N.W. by N. 4 miles. At 3 cables to the south-west of these rocks is a reef which breaks only at low water; the marks for it are, the east end of Cake islet (on the east side of Lokaup) in line with the Pillars, bearing N. by W. $\frac{3}{4}$ W.

The channel between Tu-niang island and Teyih point, the west point of Bias bay, is $1\frac{1}{2}$ mile wide; both shores are steep-to, with the exception of the reef already mentioned, lying off Peak rock near the north-west point of Tu-niang, and a rocky ledge extending south-westerly from the first point east of a remarkable white rock on the north shore. The hills on this side attain an elevation of 2,600 and 2,800 feet.

Bias Bay is a capacious and deep inlet, similar to Mira bay. It has a chain of islands fronting its western shore, which is indented by two large bays, at the head of the principal of which is Typung harbour.

Bias point, the eastern point of entrance, is fronted by rocks to the extent of nearly a mile. The channel between them and the land is unsafe, but the

passage between these rocks and the rock lying S.E. of Bate island may be used, being 8 cables wide, with a depth inside of $4\frac{1}{2}$ and 5 fathoms.

Bate island is 8 cables long, north and south, and half a mile wide, and besides the rock which lies 3 cables south-east of it, there is another rock, awash at high water, lying N.N.E. 6 cables from its north end, and from which the south point of Lokaup island bears S.W. by W. $\frac{1}{2}$ W., and the rock south-east of Bate island S. by E.

Lokaup Island, off the south end of which there are some pyramidal rocks, bears N. by E. 6 miles from Tu-niang, and the channel between it and the west point of Bias bay is 3 miles wide, with a depth of 9 fathoms. The island is about 2 miles long, and nearly separated in two places; the highest part, 330 feet above the sea, being near the south end. There is anchorage on either side of it, according to the prevailing winds. There are six islets around this island, three on the west, two on the north, and one on the east side. The north islet of the group, named the Pillars, is remarkable from its two square pillars; there is a reef off the west end of the small island south of the Pillars.

Typung Harbour, so named from the walled town of Typung 大鵬 on its northern shore, is on the west side of Bias bay, and although contracted, is capable of affording good shelter for moderate-sized vessels, except with easterly winds, when the anchorage under Lokaup island should be preferred. The entrance is 6 miles W. $\frac{1}{2}$ S. from the north end of Lokaup, and on the northern side there is a smooth conical hill, off which a reef commences, extending half a mile from the shore; the southern side, which is steep-to, must therefore be kept aboard. Vessels drawing more than 15 feet should not proceed farther westerly than the third point on the south side, as the bottom of the bay is shoal.

Middle Group.—About a mile northward of the Pillars is Middle group, consisting of six islets. Green island, 254 feet high, the southernmost, has an islet off its west end; and at three-quarters of a mile to the northward is Reef islet, to the S.E. of which is a reef that breaks at low water; the centre of this reef bears N. by E. $\frac{3}{4}$ E. from Green island, and S.S.E. $\frac{1}{2}$ E. from the summit of Reef islet. There is also another rock awash at low water, lying North 3 cables from Reef islet; when on it, the summit of Red islet bears E. $\frac{3}{4}$ S. There is a third rock, N. $\frac{1}{2}$ W. $1\frac{1}{2}$ mile from Reef islet, and N.W. $\frac{1}{2}$ N. from Red islet.

Harbour Group, consisting of nine islets, lies in the middle of Bias bay, not quite a mile to the northward of Middle group. The southernmost are two small islets named the Twins, to the N.E. of which, at 2 cables' length, is Shoal island, having rocky ground extending north-westerly 3 cables from it, on some parts of which there are only 3 feet water. Shoal island is separated from Narrow island by a channel $3\frac{1}{2}$ cables wide; should it be used, the shore of the latter must be kept aboard to avoid the shoal just mentioned. Narrow island is three-quarters of a mile along, north and south, and 2 cables wide. Round island lies rather more than 2 cables to the northward of Narrow island, with a depth of 5 and 6 fathoms between them; to the northward of it at 2 cables lies a flat rock nearly awash. N. by W. 6 cables from Round island is the North Cone, a conical rock surrounded by reefs; vessels wishing to

anchor to the westward of Narrow island will find this the best channel to enter by. N.N.W. $2\frac{1}{2}$ miles from Narrow island is a low island.

At a quarter of a mile to the westward of the Twins is Tree-a-top islet, and westward of it, at half a mile, is a Sugar Loaf shaped island, having between them a good channel to enter inside the group. To the westward of Sugar Loaf is Big island, off the north face of which is a small islet, and further north a flat rock, with a reef, which shows only at low water; when upon this reef the highest part of Narrow island bears S.E. by E., and Nobby reef N. E. by E. To the N.W. of Big island is Sand patch, a low rock surrounded by sand; between it and the island there are $3\frac{1}{2}$ fathoms water. On the south side of Big island there is also a rock awash at high water.

The passage to the westward, between Big island and the main, is three-quarters of a mile wide, but a reef lies nearly in mid-channel and only shows at half tide; it bears W. by S. $\frac{1}{4}$ S. from Sugar Loaf, and N.W. by N. from Green island.

Dumbell Bay, the next inlet northward of Typung harbour on the west side of Bias bay, runs back westerly 6 miles from Big island, and carries a general depth of about 3 fathoms.

Triple Island.—From Bias point the eastern coast of Bias bay trends northerly $9\frac{1}{2}$ miles; the first islet on this shore is Triple, lying $2\frac{1}{2}$ miles northward of Bate island.

There is anchorage in the North-east monsoon between Bate and Triple islands. The channel between Triple and the main is 6 cables wide, with a depth of 3 fathoms; at a cable's length from the eastern shore of the island is a small rock which is never covered.

Tsang-chau Island is a low flat islet with a smaller one S.E. of it, lying $6\frac{1}{2}$ miles northward of Triple island. The passage between it and the mainland is a mile wide, with a depth of 2 fathoms; but rocks extend from the shores on each side of the channel.

Fan-lo-kong Harbour.—To the northward of Tsang-chau the eastern coast of Bias bay bends round to the eastward, forming the harbour of Fan-lo-kong, the entrance to which is $1\frac{1}{2}$ mile wide, with a depth in mid-channel of 4 fathoms. At 4 miles to the north-east of Tsang-chau the soundings decrease to 3 fathoms, and shoal water extends 2 miles farther to the head of the harbour. The village of Fan-lo-kong is on the northern shore. This will probably be found the best anchorage in Bias bay in a typhoon.

Pagoda Island bears from Tsang-chau N.W. by W. $\frac{3}{4}$ W. 4 miles, the soundings varying from $4\frac{1}{2}$ to $2\frac{1}{2}$ fathoms between them; the water shoals towards Pagoda, which lies 3 cables from the northern shore of Bias bay, with a depth of only 9 feet inside of it; to the W.S.W. of the island are some rocks.

Mendoza Island, 480 feet high, and $2\frac{3}{4}$ miles in circumference, bears S.E. by E. $\frac{1}{4}$ E. $7\frac{1}{2}$ miles from Bate island, and a vessel will find shelter from a S.W. wind on its northern side. On its western side there is a small islet separated from it by a channel a cable wide, and carrying 9 feet water. Taincoo island, 167 feet high, lies 6 cables to the northward of Mendoza, the depth between them being 11 fathoms; near its centre there is a remarkable cleft.

Fo-kai Point, bearing N.E. by E. $3\frac{1}{2}$ miles from Mendoza, is the south extremity of a high promontory, connected to the main by a low sandy isthmus; the land near the point is high, and has the appearance of an island when viewed from eastward or westward. On the summit of the Fo-kai hills is an artificial mound 670 feet above the sea, and on the hill over the south-west point stands a large fort. On the east side of the isthmus lie three rocky islets; and E. by N., 8 cables from the northernmost islet, is a reef showing at low water, from which the east extreme of Fo-kai point bears S. by W. $\frac{1}{2}$ W.; and the Pauk Piah rock E.S.E.

Harlem Bay, or Pinghai, 平海 formed to the westward of the Fo-kai promontory and northward of Mendoza island, affords secure anchorage in the North-east monsoon; but it cannot be considered safe during a typhoon, when the winds are liable to shift suddenly to different points of the compass. A good berth will be found to the northward of Hebe islet, in any convenient depth of water. This islet is flat-topped and 70 feet high, and a ledge of rocks, which covers at high water, extends 3 cables north-eastward of it.*

The distance between Mendoza and the west extreme of Fo-kai point is $2\frac{1}{2}$ miles, and between the two, at 6 cables from the latter, and 10 or 12 feet above the sea, is Middle rock, which may be passed on either side. On the western foot of the Fo-kai hills stands a fort, and a tall chimney on the hill over it: to the northward of the fort is a creek, which extends northerly along the sandy isthmus, and into which junks run at high water. S.W. by W. 3 cables from Hebe islet is a rocky patch, of $3\frac{1}{2}$ fathoms water, bearing North from Middle rock, and N.W. $\frac{1}{2}$ N. from the west extreme of Fo-kai point.

Tides.—It is high water, full and change, at Tu-niang island at 8h. 0m.; at Tsang-chau island, in Bias bay, at 8h. 30m.; and at Hebe islet, in Harlem bay (two days before full moon,) at 10h. 0m. In the month of April the current in this neighbourhood sets constantly to the westward, increasing its velocity upon the flood, but its rate did not exceed a knot.

Directions.—When bound to Bias bay from the eastward, after passing about a mile westward of Mendoza island, steer N.W. by W. for the opening between Lokaup and Bate islands, carrying a depth of 13 to 10 fathoms over muddy bottom. If there is a turning wind, when standing westward, do not bring Bate island to the eastward of N. $\frac{1}{2}$ E., nor A-cong rock to the southward of S. by W. $\frac{1}{2}$ W., until Tsincoc island bears to the southward of East, to avoid the Middle rocks. From thence either proceed up the bay to an anchorage in 5 fathoms water, about $1\frac{1}{2}$ mile from the eastern shore, 3 miles northward of Triple island, or to the southward of Lokaup to an anchorage in the bay or in the harbour of Typung. There are several populous villages on the eastern shore, where no doubt refreshments could be obtained.

If bound to Harlem bay, round Fo-kai point in 13 fathoms about half a mile off, and either haul up between the shore and the Middle rock, or pass between the rock and Tsincoc island. If the wind be easterly, it will perhaps be better

* See Plan of Harlem Bay, scale, π = half an inch, surveyed by Lieut. D. Ross, I.N. 1812.

for a vessel of moderate draught to adopt the former channel, as she will fetch the anchorage without tacking, taking care, however, to avoid the $3\frac{1}{2}$ fathoms patch to the south-west of Hebe islet; but a large ship should pass westward of the Middle rock, although she should have to tack, as she will then be far enough from the high land to avoid the variable flaws of wind, and the disagreeable consequences that might arise from being baffled in a narrow channel.

Sam-chau Islet.—From Fo-kai point the coast trends N.E. by N. 12 miles to Ross head, and at the distance of 9 miles is Coast islet, lying 4 cables from the shore. Shoal water, over rocky bottom, extends 6 cables to the southward of this islet, and here, close to a flat rocky head, there is an opening a cable wide into the extensive inlet of Sam-chau, the channel, carrying 5 and 6 fathoms, being close to a narrow cliff on the southern shore; but in strong easterly winds the sea breaks across it. The entrance bears W. by N. $\frac{1}{4}$ N. from Si-ting islet, and E. $\frac{1}{4}$ N. from Harlem peak, which, rising 2,070 feet above the sea, forms a conspicuous landmark. S.S.W. $\frac{1}{4}$ W. nearly $2\frac{1}{2}$ miles from Coast islet lies a sunken rock, from which Si-ting bears East 6 miles, and Harlem peak N.W. $\frac{1}{4}$ W.

Commander P. Cracroft, of H.M.S. *Reynard*, who visited this inlet in chase of pirates, says, "The mouth of the inlet is very little wider than the breadth of a ship; there is also an inner bar with an equally narrow passage; and across both these bars the tide runs with a velocity of 5 knots. The depth in the channel varies from 6 to 8 fathoms, and deepens to 10 fathoms above the upper bar, where there is ample room for a vessel to swing; but such is the intricacy of the navigation, that a personal examination should be made, and the state of the tide carefully ascertained, before attempting the entrance."

Pedro Blanco, or Pedra Branca Rock, called **Ta-sing-chan 大星簪** in lat. $22^{\circ} 18\frac{1}{2}'$ N., long. $115^{\circ} 7'$ E., bears S. by E. $\frac{1}{2}$ E. from Pauk Piah rock; S.S.W. $\frac{1}{2}$ W. from Ty-sami mound; E. $\frac{1}{4}$ N. 42 miles from the south extreme of the South Ninepin; S.E. $\frac{1}{4}$ E. $19\frac{1}{2}$ miles from Mendoza island; and S.W. by W. $\frac{1}{4}$ W. 83 miles from Flat reef, Breaker point. When bearing North it appears as two rocks; the summit is of a white colour. It is bold to approach, having 20 fathoms close to the southward, and 18 fathoms to the northward, decreasing gradually to 13 fathoms in the neighbourhood of the Pauk Piah.

Pauk Piah and Whale Rocks.—The Pauk Piah is a flat rock, 4 feet above high water, from which the summit of the Fo-kai hills bears W. $\frac{1}{2}$ N. 7 miles.

S. by W. $2\frac{1}{2}$ miles from the Pauk Piah lie the two Whale rocks, upon which the sea sometimes breaks. They rise abruptly from the depth of 12 fathoms, and when on them, the west extreme of Fo-kai point is on with the summit of Bate island, and bears W. by N. $\frac{1}{4}$ N., the summit of Fo-kai N.W. by W. $\frac{1}{2}$ W. 7 miles, and the summit of Mendoza West a little northerly.

Tung-ting 東挺 and Si-ting 西挺 are two rocky islets about 50 feet above the sea, lying S.E. $\frac{1}{4}$ S. and N.W. $\frac{1}{4}$ N. from each other, distant $1\frac{1}{2}$ mile apart; there are sunken and detached rocks lying around them both, and the depth of water in their vicinity is 9 fathoms. From Si-ting the summit of

Fo-kai point bears S.W. by W. $\frac{1}{2}$ W. 11 miles, and the Pauk Piah S.S.W. $\frac{1}{2}$ W. $6\frac{1}{2}$ miles.

N.W. by W. $1\frac{1}{2}$ mile from Si-ting lies a rocky patch upon which the sea sometimes breaks. Hat islet bears from it N.E. $\frac{1}{2}$ E., and Harlem peak W. $\frac{1}{2}$ N.; Mace point, open north of Hat islet, bearing about N.E. $\frac{1}{2}$ E., will lead to the northward. There is also the single rock which breaks only at low water or when there is a heavy sea, and from which Si-ting bears S.W. by W. $\frac{1}{2}$ W.; Tung-ting S.W. by S.; Hat islet N. by E.; and Harlem peak W. $\frac{1}{2}$ N.

Hong-hai Bay, about 15 miles to the north-east of Fo-kai point, is extensive, but in the upper part the water shoals to 3 and 4 fathoms, and it is open to S.W. and South winds. There are several islands in the bay, the largest of which, Hong-hai, is in the middle of it.

Vessels are recommended not to pass to the westward of Tung-ting and Si-ting, nor into the north-west part of Hong-hai bay, as they will experience a heavier sea there than outside.

Hong-hai Island, 紅海山 bearing N.E. $\frac{1}{2}$ E. 8 miles from Si-ting, is half a mile long, east and west, 3 cables wide, and will afford shelter on its northern side from southerly winds. S. by E. $\frac{1}{2}$ E. from its summit, which is 240 feet high, there are two rocks, visible at low water; they lie 3 cables from the shore, with the south-west point of Hong-hai bearing N.W. by W. $\frac{1}{2}$ W.; and in line with the south end of Inside island, and the east point of Hong-hai N. by W. westerly, and in line with the highest part of Mace point.

Hat Islet is a peaked rock lying $2\frac{1}{2}$ miles westward of Hong-hai. It is called Ke-sin-shek 鷄心石 (Fowl's Heart Rock,) which it more resembles than a hat; there are detached rocks about it.

Shoal Bay is formed at the head of Hong-hai bay, 3 miles N.N.E. of Hong-hai island. Its entrance is 2 miles wide, and within the heads the depth is less than three fathoms. There is an inlet, with only 6 feet over the bar at low water, which communicates in its north-east part with Hie-che-chin bay; by report it is navigable for small boats only.

At three quarters of a mile eastward of Club point, the east point of Shoal bay, there is a rocky ledge, part of which is always above water.

Inside Island, 5 miles to the N.W. of Hong-hai, is 460 feet high, a mile long north and south, and but little more than a cable wide. At 3 cables from its south-west end are some detached rocks; and in the bays east and west of it no greater depth than $2\frac{1}{2}$ fathoms will be found at low tide. There is usually a long ground-swell here, rendering it advisable for vessels not to stand farther into the bay than Hong-hai island.

West, 3 miles from Inside island, is the embouchure of a large stream, but with only 6 feet over the bar at low water.

Ty-sa-mi Inlet, 大沙尾 i. e. Great Sand Spit, the entrance to which bears E. $\frac{1}{2}$ N. 9 miles from Hong-hai island, has a channel leading into it half a mile wide, and carrying $2\frac{1}{2}$ fathoms at low water. The northern shore of the entrance is shoal to, and rather more than half a mile from the beach

are some rocks which show at low tide, and from which Ty-sa-mi mound bears S.S.E., and the low conical hill at the back of the town E. by N. $\frac{1}{2}$ N.*

The southern edge of the channel is bordered by a sandbank, which commences under Ty-sa-mi mound, and extends $1\frac{1}{2}$ mile from the shore, until its north end bears West from Entrance head, where it shoals suddenly, and has but 3 feet on its edge. The north end of the sandy spit under Entrance hill (the hill on the south side of the entrance) in line with the conical hill at the back of the town bearing E. $\frac{1}{2}$ N., will lead into the inlet on the south side of the channel. Ty-sa-mi mound is an artificial cone on the highest part of the hills over the south-east point of Hong-hai bay; its elevation is 970 feet above the sea.

Tides.—In Hong-hai bay it is high water, full and change, at 10h. 0m. and the rise is $6\frac{1}{2}$ feet.

Goat Island. lying S.E. 3 miles from Tsieh point, the eastern outer entrance-point of Hong-hai bay, is the southernmost and largest of a numerous group, amongst which there are no navigable channels. S.W. $\frac{1}{4}$ W. from its summit, and S.S.E. $\frac{1}{2}$ E. from Ty-sa-mi mound, lies a dangerous rock, which shows only when the tide is low and the wind high. At rather more than a mile inland from the beach to the northward of Goat island, is the walled town of Tsieching.

Anchorage.—There is good anchorage in the N.E. monsoon on the north-west side of Goat island, which, with the group of islets to the northward of it, shelters well from the heavy sea. This roadstead is much used by the opium vessels, which approach as close to the shelving beach as the depth of water will allow.

Reef Islands lie S.E. by E. 3 miles from Goat island; and E. $\frac{1}{4}$ N. $1\frac{1}{2}$ mile from the latter, and N.W. $\frac{3}{4}$ W. 2 miles from the north end of the former, there is a rock on which the sea breaks at low water. The southern island of the group is the largest, and reefs extend a cable's length in a southerly direction from its east end.

Vessels may pass between the Reef islands and some rocks awash, lying $1\frac{1}{2}$ mile to the northward, the depth being 7 and 8 fathoms; but it must be borne in mind that the shoal water extends rather more than 2 cables to the northward of the islands; the north end of the danger bearing W. $\frac{1}{4}$ S. from Chelang point. Vessels should not pass between the rocks awash and the coast.

Chelang Point, bearing E. by N. $\frac{1}{4}$ N. 5 miles from the Reef islands, is very remarkable, of moderate height, composed of red sand, with many ragged rocks scattered over it. The point has two islets and a reef off it, and the depth is 13 fathoms within a mile of the outer islet, which is 80 feet high.

There is a fort on the western extremity of this headland, and to the northward of the fort a small bay, which will afford shelter in the North-east monsoon; but a sunken rock, having only a foot water over it, lies N.W. by W. $5\frac{1}{2}$ cables from the fort, and from it the summit of Chelang point bears S.E. $\frac{1}{4}$ E., and is in line with the southern rock off the fort point, and Flat rock bears

* See Plan of Ty-sa-mi Inlet enlarged, scale 1 inch to a mile, on Sheet 2, East Coast of China.

HIE-CHE-CHIN BAY AND ISLETS NEAR.

S.W. $\frac{1}{2}$ W. Flat rock lies W. by N. $1\frac{1}{2}$ mile from Chelang point, and there is a small sunken rock lying N.W. from it, and West from the fort.

Kin-yu 金嶼 or Kemsue, is a rocky islet, half a mile long in a N.E. and S.W. direction, lying N.E. $\frac{1}{4}$ N. $3\frac{1}{2}$ miles from Chelang point, and under its highest or north-east part there is a high rock. Its shores are bold-to, but the islet is too small to afford shelter. The channel between it and Che-chin point is $1\frac{1}{2}$ mile wide, and carries a depth of 7 and 8 fathoms; but off the point is a large white rock surrounded by reefs.

Hie-che-chin Bay, or **Kieh-shih-chin 碣石鎮** formed between Pauk-shao point on the west, and by Tongmi point on the east, carries a depth of 7 to $5\frac{1}{2}$ fathoms at the entrance, and 3 or $3\frac{1}{2}$ fathoms within a mile of its head, over soft muddy bottom. It will afford shelter from westerly and northerly winds, and from the North-east monsoon, but it is quite exposed to the southward and south-east. At the head of the bay the land is low, and there is a sandy beach; the eastern side of the bay is high and mountainous. The village of Kinsiang stands in the north-east bight of the bay, immediately under Round hill; to the northward of Kinsiang point there are not more than 3 fathoms at low tide. Two rivers empty themselves at the head of the bay, with bars of less than 9 feet water, and the sea usually breaks all across them; the western river communicates with Hong-hai bay, and affords a passage for boats and even small junks.

Near Tongmi point, which bears E.N.E. 14 miles from Chelang point, there is a remarkable conical hill 455 feet high, named Chino peak, which with the islets of Tung-kih **東桔** and Si-kih **西桔** render this side of the bay easy to recognize. The peak bears N.W. $\frac{1}{4}$ N. $2\frac{1}{2}$ miles from Tung-kih, which is about 18 feet above the sea, and has some detached rocks lying on its eastern side, and three rocks awash at low water, half a cable's length from its north-west side; the channel between it and the main is a mile wide, and carries a depth of 9 to 12 fathoms. Si-kih islet, 80 feet high, rises abruptly and is cleft at the summit; from it Tung-kih bears E.N.E. $3\frac{1}{4}$ miles, and Chino peak N.N.E. $\frac{1}{4}$ E. Between the two islets the soundings are 11 and 12 fathoms. A mile North of Tung-kih, and East three quarters of a mile from Tongmi point, is a cluster of rocks nearly level with the water's edge.

Pauk-shao Bay, on the western side of Hie-che-chin bay, affords good shelter, unless the wind comes to the eastward of South, there being a depth of 5 fathoms with Paukshao point bearing westward of South. Paukshao point is of moderate height, with numerous rocks scattered over its surface. The other point to the westward has a high battery on it; and between this latter point and the high land to the northward there is an opening into a deep harbour, the entrance to which is nearly barred by rocks, and the harbour too shoal for vessels drawing over 6 feet. There is said to be a sunken rock lying N.E. about half a cable's length from Pauk-shao point.

Chino Bay is on the eastern side of Hi-che-chin bay, to the northward of Chino peak, and on its shore there is a fort and small village, abreast of which the water is shoal, the 2 fathoms' line of soundings being half a mile from the shore. West from Chino peak the Chino reef extends 4 cables from the shore,

the outer rock of which does not show at high water unless there is a considerable swell; when upon it Tung-kih bears S.E. $\frac{1}{4}$ E., Si-kih S. by W. $\frac{1}{4}$ W., and the East White stone, in the northern part of the bay, is in line with Round hill, bearing N.N.W. $\frac{1}{4}$ W.*

A dangerous coral rock, with only 7 feet water on it, on which the *Sarah Lucy* struck, lies $8\frac{1}{2}$ cables to the south-east of the Yellow Stone. It has $4\frac{1}{2}$ fathoms mud, close to, and from it the Yellow Stone bears N.W. $\frac{1}{4}$ W.; small rocky isle at the mouth of the creek leading to Kieshi-wei N. by E. $\frac{1}{4}$ E.; and the extreme of Chino point S.S.E. easterly. When proceeding to the anchorage, keep the East White Stone open to the westward of the Yellow Stone.

The best anchorage is in a depth of $3\frac{1}{2}$ fathoms farther to the northward, about East of the Yellow Stone, which is the southernmost of all the rocks, with the exception of the *Sarah Lucy*, in the north-east part of the bay. The walled town of Keishi-wei, or 碇石衛 Ka-siak-wei, bearing E. by N. 3 miles from the Yellow Stone, will be seen over the low land from this anchorage; there is a creek leading up to it which will admit junks at low water.

Between the Yellow Stone and the rocks, three quarters of a mile N.N.W. of it, there is a channel carrying $4\frac{1}{2}$ fathoms; but vessels are recommended not to approach that part of the bay northward of the Yellow Stone, as there are several sunken rocks, one of which bears N.W. by W. $\frac{1}{4}$ W. $1\frac{1}{4}$ miles from the Yellow Stone, on which bearing it is in line with the northern end of Chino bay hills; from it the East White Stone bears N.E. by E. $\frac{3}{4}$ E. and the West White Stone, N.W. $\frac{1}{4}$ W. As this rock lies to the south-westward of all those above water, care must be taken to avoid it in working up the bay; the East and West White Stones will be known by their being the largest of the group.

Vessels drawing less than 18 feet may stand into the bay to the northward of the West White Stone, where the depth is $3\frac{1}{2}$ to $2\frac{1}{2}$ fathoms, the water shoaling gradually towards the beach.

Hutung 湖東 Point.—From Tongmi point the coast trends in an E. by N. $\frac{1}{4}$ N. direction about $15\frac{1}{2}$ miles to Cupchi point. At the distance of $4\frac{1}{2}$ miles is Black Rock point, with black rocks off it, and a square white rock on its south-west side; N.W. $1\frac{1}{2}$ cable from the white rock is a sunken rock. This bay is not deep enough to afford shelter.

About half way between the above points is the mouth of the river Hutung, which falls into the sea westward of Hutung point, but it has only 6 feet water over the bar. There is a fort on its south bank, and close to the fort a remarkable dome-shaped building, apparently intended for a fire beacon; this is a good mark in hazy weather, being so easily recognized—indeed there is nothing resembling it on this part of the coast.† S.S.E. $1\frac{1}{4}$ mile from the fort is a small islet, surrounded by reefs and detached rocks, one of which, to the eastward, is of a curious shape, from which it has obtained the name of Figure rock.

At 3 miles eastward of Hutung point, the hills come down to the beach, and on one of their peaks is a conspicuous knob. At a mile from the beach lies a

* See Chart:—East Coast of China, Sheet 3, No. 1,963; scale $d = 1\frac{1}{4}$ inches; with enlarged Plan of Chino Bay on it, scale $m =$ one inch.

† See view on Chart.

flat rock with sunken dangers between it and the shore; there is also a rock awash to the S.E. of it.

Cupchi Point or Kap-tsz-kong, 甲子港 210 feet above the sea, has a rugged summit, and near its south end there is a dilapidated fort.* South $1\frac{1}{2}$ mile from the point is Turtle rock, 14 feet above the sea, and inside of it two islets, and four patches of rock. The junks pass between Turtle rock and the rock next to the northward, though sunken rocks lie westward of both, and much discoloured water, which, however, is a help to detect them.

Between the islets and the point the channel is 2 cables wide, but the bottom is rocky and uneven, and a rock on which the steamer *Five Brothers* was wrecked, 28th Feb. 1859, lies 60 fathoms South of the point. The least water on this rock is 12 feet, and as many sunken dangers are in its vicinity, it would be imprudent for a stranger to attempt the passage. A ledge of rocks extends 2 cables from the point westward of the fort, its outer end breaking at low water.

A remarkable little black conical hill, named the Black mount, rises 230 feet above the sea from a red sand down, at $4\frac{1}{2}$ miles to the north-east of Cupchi point, and half a mile from the beach. Reefs extend from the shore half a mile along this part of the coast.

Anchorage.—There is good anchorage during the North-east monsoon to the southward of the Shag rock, which lies N.N.W. of Cupchi point, at half a mile off shore and is 3 feet above high water; it has $2\frac{1}{2}$ fathoms around it, except on its S.S.E. side, where there is a projecting reef. On the main, abreast this rock, is a fort standing on the left bank of a river leading to the walled town of Kiahtsz. The town $1\frac{1}{2}$ mile from the fort, having to the southward of it a pagoda two stories high. On the bar of the river there are 9 feet at low water, but the channel over it is both crooked and narrow. Nearer the entrance there is a second fort, and on the sandy point opposite a martello tower.

Tung-ao Road.—The village of Tung-ao 東澳 stands in a bight of the coast N.E. by E., 15 miles from Cupchi point, the intervening shore being low and sandy. On the bar of the river, west of the village, the sea breaks heavily at low water, and outside the bar the water shoals suddenly, so that vessels approaching the anchorage in Tung-ao road should not bring the fort at the village to bear eastward of N.E. $\frac{1}{2}$ N., when within $1\frac{1}{4}$ mile of it; this will be found a good roadstead in the North-east monsoon. There are two pagodas in the neighbourhood, one on the low land at the east side of the river's mouth; the other on the hills 2 miles to the northward.

S.E. by E. $2\frac{1}{4}$ miles from Tung-ao is a white rock, which forms a good mark by which this part of the coast may be recognized; half way between the rock and the village is a creek with a fort upon the hills eastward of it. The land near the coast is low, with several fishing villages in the sandy bays; the boats belonging to which are numerous, and being of different shape and smaller than those of Hai-mun and Cupchi, will enable a vessel to identify her position in a fog.

Breaker Point, 蓮花峰 the Lien-hwa-fung or Lily point of the Chinese, lying 9 miles eastward of Tungao road, and E. by N. $\frac{1}{2}$ N. 23 miles from Cup-

* See enlarged Plan of Cupchi Point, scale $m = 1$ inch, on Sheet 3, East Coast of China.

chi point, may be known by a black dome-shaped hill rising 280 feet from a red sand drift on the point, from whence the hills trend northward and westward, dipping suddenly at their extremity. At the south extreme of the point is a remarkable rocking stone, and off the south-east and south-west points of land on each side of the stone are two small islets; a fort stands on the point within. Detached reefs lie off the shore, which should not be approached within half a mile.

At 2 miles westward of Breaker point is a small islet having a Flat rock, part of which is always uncovered to the S.E. of it. W. $\frac{1}{4}$ S., distant 8 cables from this rock, and South from the islet, lies a sunken rock on which the sea seldom breaks. The bay westward of Breaker point, and which is fronted by Flat rock and the islet, cannot be recommended as a place of shelter, being full of rocks.

Tides.—It is high water, full and change, at Kin-siang point in Hie-che-chin bay, at 7h. 0m.; at the Shag rock, north-west of Cupchi point, at 8h. 0m.; and in Hai-mun bay and the Cape of Good Hope at 9h. 0m.; and the rise is 6 or 7 feet.

In Tung-so road it was high water, full and change, in January, at 3h. 0m. At 5 miles eastward of the road the ebb ran to the westward a knot per hour on the 12th day of the moon, and no flood tide was perceptible during that month. There is a tide race with the flood off the Cape of Good Hope.

From observations on the tidal streams, from January to May, between Breaker point and Hongkong, the ebb runs to the eastward, but, generally speaking, very little tide was experienced. To the eastward of Breaker point, however, the flood sets to the eastward, which is its direction throughout the north-east coast of China; the times of high water, full and change, from Hongkong to the Yang-tse-kiang, not deviating more than one to three hours before the moon's transit, unless obstructed by local causes, with the exception of the vicinity of Breaker point, where it was high water at 3h. 30m. P.M. at the full moon, January 1854.

Tong-lae Point bears N.E. by N. 5 miles from Breaker point, and about a mile westward of it is the entrance to a creek leading to the walled town of Tong-lae. On the eastern side near the entrance is a fort, under which indifferent shelter might be found in the North-east monsoon by a vessel of not more than 12 feet draught, but she would be in an awkward position should the wind come to the southward of East. Sunken rocks abound along this portion of the coast, one of which lies 6 cables from the land, with the fort bearing N.W. by N., and Rocky point N. by E. $\frac{1}{2}$ E.

Rocky point is low, and bears N.E. $1\frac{1}{2}$ mile from Tong-lae point; from thence the coast trends northerly for $4\frac{1}{4}$ miles, joining a headland with reefs extending a quarter of a mile to the south-eastward.

Hai-mun 海門 Bay is between the above headland and Hai-mun point, N.E. $\frac{1}{4}$ E. 7 miles from it, and carries a general depth of 6 and 7 fathoms. The highest part of the hills at the back of this point forms two peaks, on the highest of which is an artificial mound 590 feet above the sea. There are three pagodas on the land to the northward of the bay, two of which are on the hills,

and can be seen in clear weather from Namoa island, the other is on the low land.

Parkyns rock, on which the sea breaks at low tide, lies 9 cables to the southward of Hai-mun point, and from it the artificial mound bears N. $\frac{1}{2}$ E.; Cape of Good Hope, N.E. by E. $\frac{1}{2}$ E.; and Rocky Head point, on the eastern side of entrance of Hai-mun river, N.W. Rocky Head point in line with the west peak of Pagoda range, bearing N.W. $\frac{1}{2}$ N., will lead close to the south-west side of the rock; there is a passage between it and the main.*

A rocky ledge, with 2 $\frac{1}{2}$ fathoms on its southern end, extends 6 cables from the fort point. The above mark leading close to the Parkyns rock points to its southern edge, with the fort bearing N.E. There is also a rock awash at low water lying W. $\frac{1}{2}$ N. half a mile from the fort, the mark for which is the west peak of Pagoda range in line with a large stone in the centre of the first sandy beach eastward of Rocky Head point bearing N.W. $\frac{1}{2}$ N. The channel between this rock and the western shore of the bay is 4 cables wide.

There is another rock, showing at low water, the bearings from which are the south extreme of Hai-mun point E. by S., Rocky Head point N.E. $\frac{1}{2}$ N., and the west peak of Pagoda range N.W. by N.

Hai-mun River has 10 feet on its bar at low water. The town is built on the left bank, one mile from the entrance, and north of the town the river turns to the westward. The land being low to the northward, canal communication with the Swatau estuary will most likely be found.

Hope Bay is formed between Hai-mun point and the south extreme of the Cape of Good Hope, which bears E. by N. $\frac{1}{2}$ N. distant about 9 miles. The detached rocks lying along the coast for 3 $\frac{1}{4}$ miles to the N.E. of Hai-mun point, renders it advisable for a vessel not to close this part of the shore nearer than half a mile, until beyond that distance, when the sandy beach is steep-to.

There is a secure anchorage in the North-east monsoon on the southern side of the cape, to the north-west of Tide point; the smoothest water will be found in the outer little sandy bay near a fort and a large tree. Sunken rocks extend a cable's length from the fort point; otherwise this sandy bay is clear, and the lead will be the best guide.†

On the western side of this sandy bay is a remarkable peaked rock; and 1 $\frac{1}{2}$ miles to the N.W. of this rock is the entrance to a creek which makes the Cape of Good Hope an island, and communicates with the Swatau estuary and the river Han. The creek has 7 feet water over the bar, which is barely a cable across, and is defended by a fort. Reefs extend south-westerly 3 cables from the latter fort to a rock awash at high water, rendering the straight channel impassable to the large fishing boats at low water; at this time of tide they leave the rock to the eastward, and pass between it and two islets off the fort. In the event of a vessel being wrecked on the coast, and the crew wishing to reach Swatau, this would be the best route, as few boats could live in the tide race off the cape.

Cape of Good Hope is the north-east extreme of a hilly peninsula, the

* See enlarged Plan of Hai-mun point, scale $m = 1$ inch, on Sheet 3, East Coast of China.

† See enlarged Plan of Cape of Good Hope, on Sheet 3, East Coast of China; also Entrance of the River Han, No. 2,789, scale $m = 0.75$ of an inch.

highest part, 480 feet above the sea, appearing like a dome. The eastern face of the peninsula is steep-to, and has three points projecting from it; the northernmost is the cape, the middle one is named Ma-urh point, and the third Tide point, from the tide race which sets round it. On the north side of the peninsula is Green islet, having a patch of rocks between it and the land.

At 3 miles northward of the cape and half a mile from the shore is Bill islet, 55 feet high; and S. by E. 4 cables from Bill islet is Squat rock, with a reef lying 2 cables westward of it, and showing at low tide. Rocks extend from the points on the main abreast these two islets, and in the narrow channel there are 3 fathoms water. Abreast of Bill islet the coast trends N.W. by N. 3 miles to Sugarloaf island, which has a reef extending a cable from its east point.

River Han.—From Sugarloaf island the coast trends westward, forming the south side of the entrance of the river Han, the bar of which has 2½ fathoms on it at low tide. N.W. by N. three-quarters of a mile from Sugarloaf is Double island, from which the town of Swatau 汕頭 or Shantau, upon the north bank of the river, bears W. by N. ¼ N. 4½ miles. At half a mile to the south-east of the town the depth is 8 fathoms, and at low tide the water in the rainy season is fresh. Swatau is the port of Chinghae 澄海, which is distant about 2 miles to the north-east. The country in the vicinity is highly cultivated; sugar-cane and tobacco grow luxuriantly.

* The tides inside Double island are very irregular; in ordinary weather the rise and fall is from 8 to 9 feet. Any vessel from 13 to 14 feet draught, with a fair wind, could, in fine weather, with no ground swell on, enter the port at any time of tide with safety.

Directions.—The Cape of Good Hope may be rounded closely, if necessary, when bound to the river Han, steering for the Pagoda hill, which makes like an island to the northward, until Bill islet and Squat rock are plainly seen. Having passed about 2 cables eastward of Bill islet, bring the middle of the islet in line with the extreme of the Cape, and it will lead in mid-channel and towards Double island. When the high point opposite Swatau opens northward of Double island, a vessel may stand towards the latter, close to the fishing-stakes, but its south-east side should not be approached within 3 cables' length. Double island will not show double until it bears N.W., and Sugarloaf island is likely to mislead a stranger, as it has not the slightest resemblance to its name.

The channel between Double island and the mainland to the northward is half a mile wide, the mud drying that distance from the shore, which is low. Joachim bank is an extension of this mud flat in a south-easterly direction, its southern edge in 2 fathoms bearing E. by S. 2½ miles from Double island. A good guide to lead a vessel of 14 feet draught to the eastward of this bank is, to keep Brig island open of the east end of Fort island bearing N.E. ½ N.; but great care must be taken, for in bad weather the sea breaks heavily, and in light winds the flood sets strongly over it.†

Fort Island, with a fort on the table-land at its western end, lies E.N.E. nearly 2 miles from a pagoda (260 feet above the level of the sea,) which bears

* See Plan of Namoa Island, No. 1,967; scale, m = 0·7 of an inch.

† Nautical Magazine, page 336, year 1860.

NAMOIA ISLAND.

N. $\frac{1}{2}$ E. 10 $\frac{1}{4}$ miles from the Cape of Good Hope: the pagoda stands on an isolated hill near the coast, and the land in its vicinity is so low that the hill when first seen appears like an island. The channel between Fort island and the main is shoal.

Brig Island, so called from a rock at its southern extremity, which appears like a brig, when seen in an east or west direction, lies N.E. $\frac{3}{4}$ E. 4 miles from Fort island, the depths varying from 2 $\frac{1}{2}$ to 4 fathoms, the most water being towards Brig island.

Namoa Island or Nan-agan 南澳, 12 miles long, east and west, and 5 $\frac{1}{4}$ miles wide at its broadest eastern part, is separated from the main by a channel about 2 $\frac{1}{4}$ miles wide, with depths varying from 3 to 6 fathoms. The peaks of this island (of which there are three) form the most prominent landmarks in the neighbourhood, and rise to the height of 1,700 and 1,900 feet above the sea. Notwithstanding its barrenness, the island is exceedingly populous, the fisheries affording a livelihood to the greater portion of the inhabitants. Clipper point, its western extreme, is fronted to the southward by knolls of sand which shift, and which render local knowledge necessary when steering for the anchorage on the west side of Namoa. The eastern entrance, between the north point of Namoa and Fort head, is much wider, and has a general depth of 7 fathoms.

Knolls off West End of Namoa.—S.E. by E. 4 $\frac{1}{4}$ miles from Pagoda hill, with the west end of Namoa island in line with Breaker island bearing N.E. $\frac{1}{2}$ N., there was formerly a shoal with only 11 feet water on it; in August 1844, there were several knolls, none of which however had less than 13 feet. The following are their bearings:—

The west point of Namoa island in line with Breaker island N.E. by N. is the mark for three of the knolls. From the westernmost knoll, with 13 feet on it, Pagoda hill bears N.W. by W.; from another with 17 feet it bears W.N.W.; and from a third with 18 feet it bears West. With Pagoda hill W. by N., and the west point of Namoa N.N.E., there is a knoll with only 14 feet on it. All these are sand, and will probably be found to shift, owing to the freshes from the river Han.

Baylis Bay and Clipper Roads.—Baylis bay is the first inlet on the west side of Namoa island, to the northward of Clipper point, and there is a fort on the ridge to the westward of it, and an outwork on the beach. There are three knolls off this bay, bearing from the fort as follows: the first, W. by N. rather less than a cable's length from the fort point, with only 5 feet water over it; the second, N.W. $\frac{1}{2}$ N. a cable's length from the point, with 9 feet on it; and the third, N.W. $\frac{1}{2}$ N., a quarter of a mile from the same point, with 11 feet on it. From the latter the summit of Brig island bears N.W. $\frac{1}{2}$ N., and the summit of Fort island W. by S. $\frac{1}{2}$ S.

With the exception of a few narrow passages of about 90 or 100 feet wide, the channel inside Namoa island is staked across; but vessels soon shoot through them. From Baylis bay a bank commences and borders the north-west coast of Namoa for 2 $\frac{1}{4}$ miles; its greatest distance from the shore is 4 cables; the lead gives no warning, and there are only 9 feet upon its edge.

Folkstone Rock, with only 5 feet on it, lies with the south extreme of the

Brig rock in line with the north-west head of Fort island, bearing S.W. by W $\frac{1}{4}$ W.; and Cliff island (the largest of a cluster of islets 3 miles north of Brig island) N.W. The south extreme of Brig rock, just open of the north-west extreme of Fort island, will lead south of the Folk-stone, and also of the shoal which extends nearly all the way from Brig island to Breaker island; the latter (a peaked rock with several others around it, which must not be approached nearer than 2 cables upon its western side) bears from Brig island N.E. by E. $\frac{3}{4}$ E. To the eastward of Breaker island, shoal water extends a great distance from the northern shore; its south edge in 3 fathoms bears East 3 miles from the island.

Shoal Bay.—From Opium point the north coast of Namoa trends to the south-east, forming a deep indentation, named Shoal bay, in which there are two islets and several rocks; the land at the bottom of this bay is low, and only a mile across to the southern side of the island.

Nan-gaou Bay, the next bay eastward of Shoal bay, has at its head a walled town, the residence of the magistrate of the district. Vessels drawing less than 18 feet may stand into this bay until Pagoda island bears E. by N.; but during the North-east monsoon there is a considerable swell in it, and the entrance of Challum bay, on the opposite shore, will be found a more eligible anchorage, and vessels will be in a better position to avail themselves of the land wind, which usually draws to the northward in the morning.

The North point of Namoa has a double peak over it, and forms the eastern boundary of Nangaou bay: rocks extend 3 cables from its north-eastern face.

Pagoda and South Bays.—From Clipper point the southern coast of Namoa trends nearly East 5 miles, where there is a small bay with a pagoda upon its eastern point. This portion of the island corresponds with Shoal bay on the northern shore.

South bay is 4 miles eastward of Pagoda bay, and affords good shelter in the North-east monsoon; rocks extend $1\frac{1}{2}$ cables southerly from its eastern point. Vessels drawing 18 feet may run into this bay until the extreme of the point bears S.E. About half a mile to the south-east of the point is a low flat island, called Crab islet, and in the channel between it and Namoa the ground is foul. At about $1\frac{1}{4}$ mile eastward of South bay is a bold bluff (the southernmost point of Namoa), with three tall chimneys on it.

Tides.—It is high water, full and change, in Clipper road, Namoa island, at 11h. 15m., and springs rise about 7 feet. The streams on the north side of the island run parallel to it at the rate of 1 to 3 knots. The flood comes in on the north as well as on the south side of the island, but the streams in the neighbourhood of Nan-gaou bay are not so strong as at the western end of the island, where they run 4 knots at the springs, the ebb coming from the eastward.

Lamook Island or Nan-pang 南彭 are a group of four islets, with two patches of rocks extending altogether in a N.E. and S.W. direction $7\frac{1}{4}$ miles. From their south extreme, the west end of Namoa bears N.W. $\frac{1}{4}$ W., 22 miles; from their north end, the east point of Namoa bears N.W. $13\frac{1}{2}$ miles, and the south-eastern Brother N.E. by E. 25 $\frac{1}{4}$ miles. At the south-west end of the group are two square rocks, 15 feet above high water, and named Boat rocks; they are about the size of boats, and have several reefs between them.

LAMOCK AND DOME ISLANDS.

White rock, lying N.E. $1\frac{1}{2}$ miles from the Boat rocks, is sufficiently large to afford protection to boats. The distance between the White rock and High Lamock island is 3 miles, with a safe channel between, the depth varying from 8 to 14 fathoms. High Lamock, 250 feet above the sea, is thickly covered with brushwood. The channel between it and East Lamock is $1\frac{1}{2}$ miles across, and in about the middle of the channel there is a rock, with a reef, which shows at low tide, extending southerly $1\frac{1}{2}$ cable lengths from it. The three northern islets lie close together; the northern one, which has a pyramid on it, is without vegetation.

Mr Anderson, master of the ship *Sir E. Ryan*, states that he saw a rock to the N.E. of the Lamock islands—"a rock awash 3 miles from the North rocks, with all the Lamocks in one;" H.M.S. *Plover*, however, searched for it without success.

Tides.—In the month of April, with High Lamock island bearing E. $\frac{1}{2}$ S. 17 miles, the tides made as follows: 1st hour of ebb S.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ knots; 2d hour S.W. by S. $1\frac{1}{2}$ knots; 3d hour S.W. by S. $1\frac{1}{2}$ knots; and the 4th hour, S.S.W. half a knot. Flood, 1st hour, N.E. by E. 1 knot; 2d hour, E.N.E. $1\frac{1}{2}$ knots; 3d hour, E.N.E. $1\frac{1}{2}$ knots; 4th hour, E.N.E. $1\frac{1}{2}$ knots; and the 5th hour, E.S.E. half a knot. And in September, with High Lamock bearing E. by N. 4 miles:—The ebb, 1st hour S. by E. half a knot; 2d hour, S. by W. 1 knot; 3d hour, S.S.W. 1 knot; and the 4th hour, S.S.W. $1\frac{1}{2}$ knots. The flood ran to the N.E. the whole tide, the total amount being $10\frac{1}{2}$ knots.

Thus in passing inside the Lamock islands, attention to the tide as well as to the vessel's course is necessary.

Dome Island and Lamon Rocks.—Between the Lamock islands and Namoa are four islets; the northernmost of which is the highest, and from its appearance is called Dome island. The two southern islets, lying east and west of each other, are named Ruff rock and Oeste rock; to the southward of the Ruff are the Dot and Sul rocks. A reef extends a third of a mile to the southward of the Sul; the east end of the Oeste in line with the east end of Plat island bearing N.W., leads to the southward. Plat island is flat-topped, and is lower than the Ruff or the Oeste.

Sinta Rock, with only 2 feet water upon it, lies S.E. $\frac{1}{2}$ S., nearly 5 miles from Dome islet, with the south-west extreme of Ruff rock in line with the summit of Plat island, bearing W.N.W.; the East point of Namoa island N. by W.; and the highest part of High Lamock island E. by S. $\frac{1}{2}$ S.

Yang Rock, awash at low water, lies N. $\frac{1}{2}$ E. 5 miles from the Sinta, with the north end of Crab islet in one with the south-west point of Namoa, bearing W. by N.; Dome islet W. by S. $\frac{1}{2}$ S. High Lamock S.E. $\frac{1}{2}$ S., and the east end of Namoa N.N.W. $\frac{1}{2}$ W. The North point of Namoa seen clear of the East point, leads to the north-eastward.

Half-tide Reef.—There is another patch of rocks, which show at half tide, between Dome islet and Namoa, bearing from the former, from N. by E. to N.N.E. $\frac{1}{2}$ E. distant one mile. They lie rather more than a mile from the Namoa shore, S.E. by S. from Three Chimney bluff.

Chelsieu Rocks, a name corrupted from Tsat-sing-san 七星山, 20

feet high, are a cluster of four rocks bearing East nearly 7 miles from the North point of Namoa island.

The *Dioyu* is a reef just awash at high water, lying N.W. by N. $3\frac{1}{2}$ miles from the Chelsieu; but should high tides and smooth water prevent its being seen, Pagoda island in Nangaou bay, in line with Saddle peak, on Namoa, bearing S.W. by W. $\frac{1}{2}$ W., will lead northward of it.

Challum Bay is fronted by the northern side of Namoa island, and its entrance affords better shelter during the North-east monsoon than Nangaou bay.

To enter this bay, pass within a mile westward of a barren rock, named Middle islet, bearing N.E. by E. $5\frac{1}{2}$ miles from Breaker island. The anchorage is between Entrance island and Middle islet, in 6 to 3 fathoms; the bay north of Entrance island is shoal. Should a vessel pass eastward of Middle islet, it must be within half a mile, as there is shoal water (11 feet) extending 9 cables from Fort head. When running in, steer for the east point of Entrance land, and beware of the starboard shore, as the water shoals suddenly on that side, and there is a sandbank which shows at low water, lying nearly half a mile to the southward of the west end of Challum island. Under Fort head is a rock nearly covered at high tide, and also one in the bay between it and Difficult point; otherwise the coast line here is steep-to.

Difficult Inlet, 110 feet above the sea, lies nearly 3 miles to the E.N.E. of Fort head, the east point of Entrance to Challum bay: and on the highest part of the hills over Difficult point (the point west of the islet) is a square fort.

Ternate Rock, with only one foot water on it, lies E. by N. $1\frac{1}{2}$ mile from the summit of Difficult islet, which will then be in line with the third and last sandy hill on the northern part of the range extending from Fort head. Pagoda island, in Nangaou bay, in one with Namoa peak S.S.W. $\frac{1}{2}$ W., will lead close to the eastward of it.

Shallow Bay.— $8\frac{1}{2}$ miles E.N.E. of Difficult point is the entrance to a shallow bay, with a pagoda on an island within it; the boundary line of the two provinces, Fuh-kien and Quang-tung, passes through this bay.

Chauan Bay.—The entrance to this bay is 10 miles to the N.E. $\frac{1}{2}$ E. from the north extreme of Namoa island, and its western point, which is the eastern point of Shallow bay, has a small islet off its south extreme.

This bay may be useful during the southerly monsoon, but in the North-east monsoon a vessel should endeavour to reach Owick bay, as the other runs far enough back to the north-east to allow an awkward sea to arise. At the entrance is a middle ground with $2\frac{1}{2}$ and 3 fathoms on it, the south end of which bears W. by N. from Chauan head, the west end S. by E., and the east end S. by E. $\frac{1}{2}$ E., from the pagoda in Shallow bay. On the eastern side of the entrance is Quadra island, and at 3 cables from its south-west point is a reef awash at low water; when on the reef, Chauan head bears S.E. by E. $\frac{1}{2}$ E., and the west end of Quadra, N.E. by N. Shoal water, which may be detected by its colour, also extends upwards of a mile from the north-west side of the bay.

Anchorage in 6 fathoms water will be found with the centre of Quadra island bearing S.E. ; and farther up the bay in 3 fathoms, with the south end of High island in line with the east point of the bay. Between High and Quadra islands, and between High island and Chauan head, the channels are too narrow for square-rigged vessels.

Owick Bay, at 2 miles eastward of Chauan head, is protected to the eastward by a narrow isthmus, having two rocks off its south extreme. Vessels seeking shelter from northerly winds will find smooth water in $3\frac{1}{2}$ fathoms, when the extremes of these rocks bear S.E. Immediately eastward of Owick bay is a remarkable sand patch, which will help to point out its position.*

Jokako Point.—Jokako peak, the highest part of the land at the back of Owick bay, rises 880 feet above the sea, and is conical shaped. Bell island, lying 3 miles eastward of Owick point, is perforated at its south end, which will be seen on a S.E. or N.W. bearing. There is a smaller islet between it and Jokako point, having a reef off its northern end, which contracts the channel between Bell island and the point to half a mile, and in the middle of it the depth is only $2\frac{1}{2}$ fathoms. Jokako point is an isolated hill 640 feet above the sea: off it are two islets; the nearest, Cliff islet, bearing S.E. by E. 1 mile, and the other, Square island, E.N.E. $1\frac{1}{2}$ miles. Square island is perforated. A reef extends a cable's length N.N.W. from Cliff island, otherwise the channel between these islets and the point is safe.

Cone peak, elevated 800 feet above the sea, with a peaked rock off its eastern point, bears N.N.E. $\frac{1}{2}$ E. $5\frac{1}{2}$ miles from Jokako point; the land between is a sandy plain very little above high water level, and the distance across to the bottom of Chauan bay is only $1\frac{1}{2}$ mile.

The Brothers are two islets or rocks, distant $2\frac{1}{2}$ miles from each other in a S.E. $\frac{1}{2}$ E. and N.W. $\frac{1}{2}$ W. direction, and lying S.E. by E. about 12 miles from Cone peak. The south-eastern islet (the larger and much higher of the two, and with a fine bluff at its south extreme) is in lat. $23^{\circ} 32\frac{1}{2}'$ N., long. $117^{\circ} 42'$ E., and has a reef extending north-westerly from it; the small islet has a remarkable square top.

Tong-sang 銅山 Harbour.—The position of this harbour, which is one of the best on this coast, will be readily recognised by a remarkable peak (Fall peak, 930 feet above the sea,) which rises on its eastern shore, and makes something like a saddle, but with a deeper indentation; upon the island at the entrance is a pagoda, which bears from the south-east Brother, N.W. by N. $14\frac{1}{2}$ miles. A mud bank, with $3\frac{1}{2}$ fathoms on it, lies outside the entrance, with the pagoda bearing N.W. $\frac{1}{2}$ N. and Fall peak N.E. $\frac{1}{2}$ N; but by keeping the Sisters (two small islets in the northern portion of the harbour) well open of the east end of middle island (the island north-east of Pagoda island,) a vessel will pass eastward of the bank.*

Pagoda island and the eastern shore of the harbour are steep-to, until the low isthmus is opened which connects Thunder head with Fall peak; the eastern shore then becomes shoal, and the larger Sister must not be brought westward of N. by W. $\frac{1}{4}$ W. There are also some rocks extending $1\frac{1}{2}$ cables from

* See Chart, East Coast of China, Sheet 4, No. 1,760; scale, $d = 14\frac{1}{2}$ inches.

† See Plan of Tongsang Harbour and Hutian Bay, No. 1,958; scale $m = 1$ inch.

the south point of Middle island, and a mud bank projects northerly half a cable from its east point.

H.M.S. *Plouer*, when surveying this harbour, first anchored in $4\frac{1}{2}$ fathoms, with Fall peak bearing E. by N. $\frac{1}{2}$ N., and the larger Sister N. by W. $\frac{1}{2}$ W., under a long sandy point. Afterwards, for the convenience of watering, which was readily obtained and that in the dry season, the vessel was moved to the southward under Thunder head, Fall peak bearing N.E. and the east end of Middle island N.W. $\frac{1}{2}$ W. Thunder head by the Chinese is called Kau-li-tan-shan, 高麗頭山 which means High Fair Head hill.

Junks anchoring for the tide bring up between Pagoda and Middle islands; but in running for this anchorage, care must be taken to avoid some rocks extending south-easterly 2 cables from the east point of the northern portion of Pagoda island. The best berth will be found in 12 fathoms, when the Sisters are seen through the opening in the Middle islands; but these islands must not be closed nearer than 2 cables, as there is a mud bank extending from them in a southerly direction. This anchorage, although confined, will be found handy for a disabled vessel, in case the ebb tide should prevent her reaching the other, and she will be nearer the town of Tongyung, where spars can be obtained.

The walled town of Tongyung stands on a peninsula on the western shore of the entrance abreast Pagoda island; and although the channel between it and the island is 3 cables wide, it is not a good one to enter by, as rocks extend from both shores. Tongsang basin runs back N.N.W. 11 miles from the Middle islands, and there is said to be a river at its head; 3 fathoms water were obtained at the highest point reached, but the channel was very narrow.

There is a boat passage on the western side of the basin leading into Chau-an bay, the entrance to which bears West from Fall peak. In the north-west portion of the basin is a range of high mountains, remarkable for their rugged appearance.

Caution.—When running into Tongsang harbour, sail should be reduced in time, if the wind is fresh outside, for violent squalls will be experienced under Thunder head.

When proceeding eastward, the coast on the eastern side of Thunder head must not be approached within a cable's length, as there are some rocks along it; the south face of the head, however, is steep-to.

Tides.—It is high water, full and change, in Tongsang harbour at 11h. 20m.; springs rise 12 feet.

Rees Rock, which covers at high-water springs, lies S.E. by E. $\frac{1}{2}$ E. $1\frac{1}{2}$ mile from Fall peak, with the chimneys (called Ma-tsu-kung 媽祖宮) on Chimney island, forming the eastern side of Rees pass, bearing N.E. by N.; a rock, on which the sea breaks at low water, lies a cable's length to the eastward of it. Pass islands bear N. $\frac{1}{2}$ E. $1\frac{1}{2}$ mile from Rees rock, and the ground between them and the rock being foul, with shoal water, should not be approached. Junks use a channel 2 cables wide between the Pass islands and the main.*

* See enlarged Plan of Rees Pass, scale $m = 2$ inches, on Sheet 4., East Coast of China.

Rees Pass is formed between the Pass and Rees islands, and on its eastern side, W. by S. from the chimneys and 3 cables from the shore of Chimney island, is a shoal with only 2½ fathoms on it. The Rees islands are barren, and only inhabited by a few fishermen.

H.M.S. *Plover* rode out a heavy gale, veering from N.E. to E. by N., in this Pass; she anchored in 6 fathoms, at 2 cables westward of the black rock at the southern end of the sandy bay under the chimneys. There is also anchorage under South-east island in 6 fathoms, with its south point bearing East. It is said that in the northerly monsoon a vessel will not gain anything by going through the Pass, for on clearing the north end of Chimney island as much swell will be experienced as will be found eastward of the group.

The *Simplicia* Wreck rocks lie 6 cables to the N.E. of South-east island, and at their eastern end are several rugged rocks, on the outermost of which the ship *Simplicia* went to pieces on the 8th of October, 1844, having struck upon a reef which shows at low water, and lies a cable to the north-east of the outer rock.

Caution.—In the neighbourhood of the Rees islands the sea rises rapidly after the commencement of a breeze, and overtops, leading to the supposition that there must be some change in the soundings.

Dansborg Island, lying 2 miles to the N.E. of the *Simplicia* Wreck rocks, is 6 cables long, N.E. and S.W., and a quarter of a mile wide; there are three peaks on it of nearly equal heights. Skead islet is 1½ mile to the W.N.W. of this island, and between them, at the distance of 4 cables from the islet, there is another small islet, with a reef extending from its west point; a reef also projects from the east point of Skead islet.

Ching Rock, which covers at half tide, lies N. by W. ¼ W. 1½ mile from Skead islet, with the north-east peak of Dansborg bearing S.E. ¼ E.; the chimneys on Chimney island S.W. ¼ W.; the Awoota rock (called Shih-yah mu-sz' 石鴨母土, i. e. Mother Duck), W. by S. ¾ S.; and Black head, N. by E. The Ching is the highest head of a reef, of some extent, the north-eastern rocks of which break only at low water, and extend 2 cables eastward of its highest part. The eastern *Simplicia* open east of Skead islet, leads to the eastward of the reef.

Goa Rock is 2 miles to the S.W. by W. ¼ W. of the Ching, and shows at the last quarter ebb; when on it, the chimneys on Chimney island bear S.W. ¼ S., the Awoota rock W. ¾ S., the summit of the *Simplicia* Wreck rocks S.E. ¼ S., and Skead islet E. ¾ S. The Awoota lies close to the main, N.W. ¼ W. 2½ miles from the chimneys on Chimney island.

Hu-tau-shan 虎頭山, or **Tiger Head**, 5½ miles to the northward of Dansborg island, comprises five separate hills, the southern of which, Black head, or Wu-tau 烏頭, is the most remarkable. On the northern of the five hills is a walled town.

The Hu-tau-shan river, which disembogues on the western side of the head, has deep water inside the entrance, but it is not available for navigation without being buoyed, as the channels, besides being narrow and intricate, are liable to continual change.

The weather was very
 warm and the sun
 was shining brightly
 when we left the
 city. The wind was
 light and the sea
 was calm. We went
 to the beach and
 stayed there for
 several hours. The
 children were very
 happy and played
 for hours. We
 had a picnic under
 a big tree. The
 food was very good
 and we all enjoyed
 it. We went back
 to the city in the
 evening. The lights
 were on and the
 city was very
 beautiful. We
 had a very good
 time and we all
 enjoyed it very
 much.

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between the Pass and the main shore, and a distance of about 2 miles from the shore of the main island. The main shore is about 1 mile from the Pass.

The coast a heavy gale, running from N.E. to E. by S. with a force of 6 fathoms, at 2 miles westward of the Pass, where the main bay under the chimney. The main bay is about 1 mile from the Pass, and is a small bay. The main bay is a small bay, and is a small bay. The main bay is a small bay, and is a small bay.

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A spit extends 3 miles in a south-westerly direction from Black head, and some parts of it are dry at low water; its eastern edge bears W.S.W. from the head.

Anchorage.—Vessels might ride out a strong breeze under Black head, in 4 fathoms water, at the distance of 3 cables from the shore, particularly if the wind holds to the northward; should, however, a gale come on, or the wind draw round to the eastward, the sooner this anchorage is quitted the better. Under these circumstances, refuge will then be found by running through Reas pass, and anchoring close under Chimney island, or in Tongsang harbour.

The Coast from Black head to Red Bay, 10 miles to the north-east, with the exception of one hill and two hillocks, is a sandy plain. At the distance of 6 cables eastward of Tagau point is Hut islet and some rocks, a portion of which are always uncovered. Spire islet, lying 2 miles to the north-east of Hut islet, has a remarkable square column on it, and two low flat rocks to the westward. N. by E. one mile from Spire is Cleft rock, surrounded by reefs, which render it dangerous to be approached within the distance of 3 cables. Abreast Cleft islet is Crab point. Knob rock, which is steep-to, bears S.E. by E. $\frac{1}{2}$ E. $3\frac{1}{2}$ miles from Spire islet, and East $6\frac{1}{2}$ miles from Black head.

Red Bay, or Taling-kim-tai 將軍礁, will be found a fair roadstead in the North-east monsoon, and its position may be readily known by the two high Black rocks off its east point, as well as by the low red sand hills at the back of it. A reef, having 3 fathoms close to, extends north-westerly from the southern of the two rocks, leaving a passage for small boats between it and the main at low tide. N.W. by W. 7 cables from the southern Black rock is a reef which covers at high water; the anchorage lies between them, and the water will shoal gradually after passing the Black rocks. At the head of the bay there is a village and a creek, the entrance to which is dry at low water.*

Directions.—In working up to Red bay from the southward, take care to avoid the Shun reef, lying East 6 cables from a low hill on the shore, and 2 miles to the south-westward of the anchorage, which may be done by tacking when the Black rocks are in one with the point off which they lie. When upon this reef, the eastern Black rock bears N.E. by E. $\frac{1}{2}$ E.

In navigating this portion of the coast during the North-east monsoon, the wind will be found to hang to the northward from 2h.A.M. to 10h.A.M., and in the eastern quarter the remaining period. Deeply laden vessels will find it more advantageous to seek shelter in one of the harbours or roadsteads above mentioned, during a strong north-east wind, than to keep underweigh, as ground can seldom be gained, in consequence of the perpendicularity of the sea.

The Coast from Cerk point, the north-east point of Red bay, trends N.E. $\frac{1}{2}$ N. 18 $\frac{1}{2}$ miles to Chin-hai 鎮海 point, and is steep-to, with the exception of a reef off Crook point, and a sand spit, with some rocks on it, extending in a southerly direction from House hill (a low hill with a house on its summit), which bears N.W. by W. $\frac{1}{2}$ W. from Lamtia island. An inlet runs a long way back, to the westward of House hill, but it is shallow.

* See enlarged Plan of Red Bay, scale, m = 1 inch, on Sheet 4, East Coast of China.

Lamtia and Notch Islands.—Lamtia island, bearing N.E. 9 miles from Cork point, is of basaltic formation, and its southern side rises abruptly from the sea: a reef extends 7 cables to the N.W. from it. Notch island, of similar formation, and with a rock awash off its south-east point, lies N. by W. 3 miles from Lamtia island.

Chapel Island, in lat. $24^{\circ} 10' 18''$ N., long. $118^{\circ} 13\frac{1}{2}'$ E., lies N.E. $\frac{1}{2}$ N. $47\frac{1}{2}$ miles from the South-east Brother, and S.S.E. $11\frac{1}{2}$ miles from the Chau-chat rocks at the entrance of Amoy harbour. Its height is about 200 feet, the whole of the island being nearly of the same elevation, and it is perforated at its southern end; there are also two remarkable mounds like chimneys on either end of the island. When this island bore South, and about mid-way between it and the entrance to Amoy harbour, Captain Ross passed over a sandbank with 6 fathoms water on it, but no less could be found.

Meropé Shoals are between Chapel island and the coast. The South Meropé has only 5 feet on its shoalest part, at its southern end, from which Chapel island bears N.E. by E. $\frac{1}{2}$ E. $7\frac{1}{2}$ miles, and Lamtia island N.W. by W. 5 miles; from thence it extends, with depths of 3 and 4 fathoms, nearly 5 miles in a N.E. direction. There are $2\frac{1}{2}$ fathoms about $1\frac{1}{2}$ mile to the westward of its shoalest part, and probably shoal water extends to the southward, as its limits in that direction are not defined; it is said not to break except in heavy weather, or at very low tide.

When approaching this shoal from the southward, do not bring the high land of Cork point to the southward of W. by S., while Chapel island is to the eastward of N.E. Chin-hai point N. by W., or Nantai Wúshan pagoda N.N.W., will lead eastward of the shoalest part.

The North Meropé is $8\frac{1}{2}$ miles W. by N. of Chapel island, and its eastern edge bears N.E. from Lamtia island. This shoal is formed by a number of pinnacle rocks which show at half ebb, and have deep water between them.

Tingtæ Bay is 4 miles to the northward of the North Meropé shoal, and affords shelter for small vessels in the North-east monsoon. Its vicinity may be easily known by a flat table head, with three chimneys on it, forming the eastern point of the bay, and the ruins of a walled town on the hill above it. The half-destroyed pagoda of Nantai Wúshan, 1,720 feet above the sea, stands on the hills immediately at the back of this bay. The coast here continues in a north-easterly direction 3 miles farther to Chin-hai point, when it takes a sudden turn to the N.W., forming Amoy harbour.

Tides.—It is high water, full and change, at the entrance of Chauan bay at 11h. 0m., and springs rise $6\frac{1}{2}$ feet; and at the beach under Fall peak in Tong-sang harbour; and at Chimney island, in Rees Pass, at 11h. 30m., and the rise is 12 feet. The flood tide enters Tongtang harbour at the rate of three-quarters of a knot per hour.

Off Jokako point, 4 days before the change of the moon, the ebb ran $4\frac{1}{2}$ knots in one tide; the two first hours being from the N.E. by E., and the last four from the N.E.

In Rees pass, on October 25th, with a gale from the N.E., the ebb tide ran from the N. by E. in all $12\frac{1}{2}$ miles; there was no perceptible flood. Also in October, the Awoota rock bearing S.W. $\frac{1}{2}$ W. 3 miles, the 1st hour of flood ran

W.S.W. half a knot; 2d hour, S.W. half a knot; 3d hour, W.S.W. 1 knot; 4th hour, W.S.W. 1 knot; 5th hour, W.S.W. half a knot; and 6th hour, S.W. by W. half a knot. The first hour of the ebb ran N.E. half a knot; 2d hour, N.N.E. half a knot; 3d hour, N.N.E. 1 knot; 4th and 5th hours, N.N.E. a quarter of a knot.

Again, with Fall peak bearing W. by N. 7 miles; the 1st two hours flood ran S.S.E. $1\frac{1}{2}$ knot; and the 3d, S.E. by E. 1 knot. The 1st hour of ebb ran N.E. by N. 1 knot; 2d hour, 2 knots; 3d hour, N.N.E. $1\frac{1}{2}$ knot; 4th hour, N. by E. $1\frac{1}{2}$ knot; and the 5th hour, North 1 knot. Another observation in Rees Pass, the moon's age being 11 days, gave the set of the ebb from the N.N.E., last hour North $1\frac{1}{2}$ knot; and the flood from the S.W. at the rate of half a knot per hour; wind N.E., force 7.

At Red bay, in October, the moon being 19 days old, the rise and fall was 11 feet, and the ebb ran W. by N. and W.N.W., the whole amount of tide $2\frac{1}{2}$ knots. Flood, 1st hour, W.S.W. 1 knot; then E.S.E. for the remainder of the tide, whole amount $1\frac{1}{2}$ knots. Again with the moon's age 9 days, ebb ran North, and then N.W., 1 knot per hour, and the flood E.N.E. half a knot.

With Lantia islet bearing W.S.W. 7 miles, 6 days after the change in December, the ebb made from the E.N.E., then N.E., and for the last three hours N.W.; total amount in the tide, $3\frac{1}{2}$ knots. The flood came from the S.S.W., then South; total amount $4\frac{1}{2}$ knots.

Under Wu-seu island, at the entrance of Amoy, on the 4th day of the moon, the ebb came from the N.W. at the rate of $1\frac{1}{2}$ knot; and the flood from the S.S.E. at half a knot. Between Wu-seu and the main the tides are more rapid, and vessels should not attempt to pass.

Wu-seu 浯嶼 Island, 300 feet high, is on the western side of the entrance to Amoy outer harbour, and on its summit are three chimneys, which are intended for alarm signals. The island is $1\frac{1}{2}$ mile long, north and south, and near the middle only 2 cables broad. Its north-east and south-east faces are steep cliffs, and there are three sandy bays on its western side, and one on its eastern; in the northernmost bay on the western side is a large village and the ruins of an ancient fort.

The anchorage between this island and Wu-an to the westward is confined, and not so convenient of access as that under Tae-tan island; it will be prudent not to pass westward of Wu-seu, as the channels inside are only partially surveyed.*

A rock, which is sometimes covered, lies between Wu-seu and Chin-hai point, with that point bearing S. $\frac{1}{2}$ W., and Nantai Wúshan pagoda W.N.W.

The Chaochat, or Tae-tan 大礁, are a patch of three flat rocks, nearly awash at high tide, lying about half a mile eastward of Wu-seu. When on them, the three chimneys on Wu-seu are in one with Nantai Wúshan pagoda W. $\frac{1}{2}$ S.; and by keeping Tae-pan point open northward of Tsing-seu N.W. by W., it will lead outside or eastward of them, should high tides and smooth water prevent their being seen. There is a channel, half a mile wide, between

* See Plan of Amoy Harbour, No. 1,767; scale, m = 1 inch.

these rocks and Wu-seu, but in consequence of the chow-chow water there, it will be better to keep to the eastward.

The **Chin-tseao** are two patches, covered at high water, lying N.W. by N. half a mile from the north end of Wu-seu; between them and the main are several islets and half-tide rocks.

Tsing-seu 青嶼 is a table-topped island, lying three-quarters of a mile to the north-west of the Chin-tseao; it rises precipitously from the sea, and forts are built upon its summit, which is 250 feet above high water. The entrance to Amoy outer harbour is between this island and Chih-seu, 8 cables to the north-east.

At the distance of 6 cables to the north-west of the Chin-tseao, and 2 cables to the southward of Tsing-seu, lies a rock, which only shows at very low tides. To the westward of Tsing-seu are many sunken rocks, on one of which the ship *Blundell* struck in 1850. Vessels should therefore not use the channel between this latter island and the main.

Tao-pan 大磬 Shoal.—The western side of Amoy outer harbour (between Tsing-seu and Tao-pan point, which has an islet off it, and lies 4 miles to the N.W. $\frac{1}{2}$ W) is shoal, and has several reefs in it; but they will be avoided, when standing westward, by keeping the pagoda on Ki-seu island open north-east of Tao-pan point: to avoid the shoals on the north-east side of the harbour, do not bring the north end of Seao-tan to the southward of S.E. by E.

Chih-seu 日嶼 is a small islet, 60 feet high, lying N.E. $\frac{1}{2}$ E., 8 cables from Tsing-seu. Rocks extend in a southerly and an easterly direction half a cable's length from this islet, and it is connected to two other small islets, named Hwangkwa and Tao-sao, by a rocky bed which blocks the passage. Foul ground extends N.W. 4 cables from Tao-sao, and terminates in a reef which bears North half a mile from Chih-seu, and W. $\frac{1}{2}$ S. from the north extremity of Seao-tan. A vessel will keep north of this reef, by having the channel open between Seao-tan and Tao-tan.

Seao-tan 小担 Island, $6\frac{1}{2}$ cables long, east and west, and 200 feet high, has three chimneys on it, and a sandy bay on its northern side. It lies to the E.N.E. of Hwangkwa, and the channel between, which is 3 cables wide, is frequently used; but as foul ground extends to the southward of both islands, and shoal ground runs off 2 cables to the N.N.W. of the west point of Seao-tan, a heavy or unhandy vessel had better use the channel between Tsing-seu and Chih-seu. There is a signal station on Seao-tan which communicates with Amoy.

Tao-tan 大担 Island, the highest of this group, and lying to the north-east of Seao-tan, is about 8 cables long in a N.N.W. and S.S.E. direction, with a low sandy isthmus in the centre; its east end is the highest (300 feet above the sea), and has a small circular watch-house and three chimneys on it; its western end rises to a conical peak, on which is a small circular fort. The channel between this island and Seao-tan is 2 cables wide, but as vessels are likely to have baffling winds, it would not be prudent for a stranger to use it.

It is said that since the survey of this locality in 1843 the soundings on the

bank westward of Tae-tan have much decreased, and that a vessel drawing more than 12 feet must wait for high water to run through this channel, as where the depth of $3\frac{1}{2}$ and $4\frac{1}{2}$ fathoms are marked in the chart at 3 cables northward of Seao-tan, there are now only $2\frac{1}{2}$ fathoms. The rocks to the northward of Tae-tan also extend much farther out, and two separate ones are visible at low water springs. Between Tae-tan and Amoy the channel is shoal under 2 fathoms; but, as before noticed, the foul ground on the north-eastern side of Amoy outer harbour will be avoided by not bringing the north end of Seao-tan to the southward of S.E. by E.

Amoy Island, or Hia-mun 夏門, about 22 miles in circumference, occupies the northern portion of the great bight between Chin-hai and Hu-i-tan points, in the eastern portion of which is the island of Quemoy and Hu-i-tan bay. The city of Amoy stands on the south-west part of the island, abreast the small island of Kulangsen, which affords protection to the inner harbour.

The south point of Amoy is sandy, with several black rocks extending 2 cables from the shore. On the slope of the hill which forms the point is a circular battery; W. by S. 6 cables is a second battery, and between the two, at 3 cables from the shore, a half tide rock, which will be avoided by a vessel of light draught, by tacking before a cliff point with a battery and three chimneys on it comes in one with a sandy point with a large stone (named Cornwallis Stone) at its south extreme, three-quarters of mile to the north-west. From the cliff point the 3 fathoms line of soundings extends 2 cables from the shore, otherwise the shore to the westward, which is a continuous sandy beach, is steep-to, and the lead a good guide.

From Cornwallis Stone the shore trends rather more to the northward for a quarter of a mile, where there is a creek dry at low water, and at the back of the creek an extensive suburb, and an isolated hill, the summit of which is a large mass of granite. N.W. $\frac{1}{2}$ W. three-quarters of a mile from the Stone are several rocks, which cover at half tide, the outermost lying $1\frac{1}{2}$ cable from the shore; on the point from whence they extend is a mass of granite.

Kulangsen 鼓浪嶼 Island lies off the south-west shore of Amoy, and the channel between is 675 yards wide. The island is nearly 3 miles in circumference, and there are two distinct ridges upon it, the highest point being 280 feet above the sea.

This island has detached rocks lying off nearly all the points; there are several that cover at high water off the north point; one of which, with only $1\frac{1}{2}$ feet on it at low tide, lies N.N.W. $\frac{1}{2}$ W. nearly 4 cables from the point, with the north extreme of Watson island bearing N.W. by W. $\frac{1}{2}$ W., and Nantai Wúshan 南大武山 pagoda South; and foul ground extends at least half a mile from the south-east point.

Coker Rock, with only 4 feet on it, lies W. by N. $\frac{1}{2}$ N. not quite 6 cables from the Cornwallis Stone, and nearly 2 cables from the beach. From the rock, Ki-seu pagoda is just open southward of the rocks lying off the south extreme of Kulangsen, and a *white beacon* erected on the east side of Kulangsen is in line with the western edge of a *whitewashed* rock. There is another head, with 10 feet on it, lying about 16 yards eastward of the 4 feet; the rock

open west of the beacon leads to the westward of it, and open twice its breadth to the east leads to the eastward.

A pinnacle rock, with only 12 feet on it, and 4 and 5 fathoms close around it at low water, lies 3 cables to the northward of Coker, with the flagstaff N.E. $\frac{1}{2}$ N., and the white rock off Kulangseu W. by S. $\frac{1}{4}$ S.

Anchorage.—The outer harbour of Amoy has extensive anchorage in 7 to 16 fathoms, good holding ground, and unless vessels are badly found it is not probable that any gale could hurt them. The usual anchorage is to the southward of Cornwallis Stone; a good berth for a large ship is in 8 fathoms, with the white beacon on the east side of Kulangseu open south of the whitewashed rock N.W. by N., and the first entrance of the sally-port in the fort opening north-west of Cornwallis Stone N.E. by E. There is also good and safe anchorage, in 7 to 17 fathoms, in the channel on the west side of Kulangseu.

Tides.—It is high water, full and change, in Amoy inner harbour at 12h. 0m. The rise and fall of the tide from one day's observation, on the full moon in September, was 14 $\frac{1}{2}$ feet; at this period, however, the night tides exceed the day by 2 feet. The change in the depth, in all probability, three days after full and change, exceeds 16 feet.

Directions.—When bound to Amoy from the southward, after rounding the Lamock islands and the Brothers, steer about N.E. by N. for Chapel island, keeping between 10 and 12 miles off the coast to avoid the South Merope shoal. The Nantai Wúshan pagoda is a good landmark by which the entrance of Amoy may be recognised, when in the neighbourhood of Chapel island, which may be passed close to on either side, and from thence an N. by W. $\frac{1}{4}$ W. course will lead towards the entrance of the harbour. As the Chauchat rocks are approached, keep Tae-pan point open north of Tsing-seu, to pass to the eastward of them, and from thence steer between Tsing-seu and Chih-seu into Amoy outer harbour.

In approaching the harbour from the eastward, give Dodd island a berth of a mile, and after passing Leoo-lu head, which is steep-to, be careful not to shut in the island with the head until Ki-seu island opens south of Tae-tan island, W. by N. $\frac{1}{2}$ N. to clear Quemoy spit. From thence steer for Tsing-seu, keeping Tae-pan point open north of Tsing-seu, to avoid the Chauchat rocks.

The channel into the inner harbour, between Kulangseu and Amoy, is so narrow, and sunken rocks lie off both its shores, that a stranger should not attempt it without a pilot. In steering in, keep the white beacon open eastward of the whitewashed rock on the eastern side of Kulangseu, to pass eastward of Coker rock. The best anchorage is between the small islet off the city point and Hau-seu 猴嶼 island. The inner harbour, however, may be reached without difficulty by passing through the channel westward of Kulangseu, taking care to give Druid head, the south-west point of the island, a berth of at least a cable's length, and recollecting that shoal water extends half a mile from the mainland on the opposite shore. After passing Druid head keep well over towards Watson and Hau-seu islands, and do not steer to the eastward until clear of the spit extending from the north point of Kulangseu.

CHAPTER IV.

EAST COAST OF CHINA—AMOY TO THE WHITE DOG ISLANDS, INCLUDING THE PESCADORES.

VARIATION $0^{\circ} 15'$ to $1^{\circ} 0'$ West in 1861.

Quemoy Island, or Kin-mun 金門, is separated from Amoy by a channel from 5 to 7 miles wide, in the middle of which is Little Quemoy island. Between Tae-tan island and Little Quemoy the channel is deep, but it is narrowed by reefs.

The channel between Little Quemoy and Quemoy is half a mile wide. To enter, bring the north east point of Little Quemoy on an N. $\frac{1}{2}$ E bearing, and steer for it until the pagoda on Quemoy bears West, then haul to the N.E. by N. for a mile, and anchor in about 9 fathoms, secure from all winds. Vessels drawing less than 15 feet may border over on the Little Quemoy shore.

Quemoy Bank extends 3 miles to the southward from the west point of Quemoy island, and several patches, on which the sea breaks heavily, dry on it at low water. It is steep-to, and the lead will give no warning. Its western edge bears S S.W. $\frac{1}{4}$ W. from the west point of Quemoy; its southern end, named Quemoy spit, bears S. by W. $\frac{1}{2}$ W. from the pagoda, and W. by S. $\frac{1}{2}$ S. from Leco-lu head.

A good mark to lead southward of Quemoy spit, is to keep Ki-seu pagoda open southward of Tae-tan island bearing W. by N. $\frac{1}{4}$ N.; care must however be taken not to mistake the north division of Tae-tan for the island itself, for the pagoda seen over the low sandy isthmus between the north and south division of the island will lead across the bank—a mistake easily made.

Leco-lu Bay.—The south-western face of Quemoy is composed of low sand-hills. From the west point of the island the coast trends S.E. $\frac{1}{4}$ E., 3 miles to the south-west point, and from thence N.E. by E. 5 miles to Leco-lu bay. Detached rocks extend 8 cables eastward of the south-west point, and great care must be taken to avoid them in foggy weather, as the tides here are so uncertain in their direction.

This bay is said to afford good shelter from N.W., round northerly, to East. Leco-lu head (a low peninsula) will be known by a high peak, rising 856 feet above the level of the sea, immediately northward of it. The head may be rounded within a cable's length, and a berth picked up according to the vessel's draught, taking care to avoid a coral shoal on which the Dutch bark *Justina* grounded, when running into this bay in 1856. It is said to be about a cable in extent, with only 9 feet on it at low water, and lies with Leco-lu head bearing E. by S. $\frac{1}{4}$ S., and Leco-lu hill N. by E. $\frac{1}{4}$ E.

HU-I-TAU BAY.

Hu-i-tau Bay, or Wei-tau 圍頭, formed between the eastern side of Quemoy and the mainland, will afford good shelter in the North-east monsoon. Hu-i-tau point, the eastern point of entrance, is 80 feet high; and on the hills north of it is a small fort, to the northward of which is a remarkable knob, 215 feet high. On the north-west side of the bay are two remarkable hills, which will serve to establish a vessel's position, when in this vicinity. West peak, the highest of the two, is 1,714, and East peak 1,390 feet, above the sea. There is no doubt, in the North-east monsoon, that, beside the tide, vessels must calculate on a southerly set, and the same, but in a contrary direction, will most likely take place in the other season of the year; this set probably accounts for several vessels having mistaken this bay for the harbour of Amoy; the following remarks, however, will point out the difference in the approach:—

Dodd island, in lat. $24^{\circ} 26' 16''$ N., long. $118^{\circ} 29' 4''$ E., may be known from Chapel island by a reef extending 3 cables to the N.N.E. of it, and on which the sea always breaks; the former also is uneven, gradually sloping to the eastward. Chapel island rises suddenly, and there is a difficulty in saying which is the highest part; it is 6 miles from the nearest land, whereas Dodd island is but 3 miles. The distance from Chapel island to the south point of Quemoy is 11 miles, but from Dodd island to Hu-i-tau point is only 5 miles. The rocks off the south end of Quemoy are peaked; the reef off Hu-i-tau point is flat. There are two pagodas on Quemoy point, which bear N.W. by W. and S.E. by E. of each other; on Hu-i-tau point is a small obelisk; and the land turns suddenly to the northward.

At $1\frac{1}{4}$ mile eastward of Hu-i-tau point is a sunken rock, on which $2\frac{1}{2}$ fathoms were found, but as in all probability there is less water its locality should be avoided. From the shoalest water obtained, the obelisk on Hu-i-tau point bore N.W. by W., Dodd island S.W. $\frac{1}{4}$ W., and Scrag point N.E. Reefs, which break heavily in bad weather, project 3 cables in a southerly direction from the point, and westerly a quarter of a mile from the first point inside the bay.

Oyster Islet and Rock.—Oyster islet is a low flat rock, bearing N.N.W. $\frac{1}{4}$ W. 2 miles from Hu-i-tau point. Oyster rock, which is awash at low water, lies S. $\frac{1}{4}$ W. 9 cables from the islet, with the obelisk on Hu-i-tau point bearing S.E. by E. $\frac{1}{2}$ E., the fort E.N.E., and the summit of Hat island in line with the left slope of a conical hill at the head of the bay, W. by N. $\frac{1}{4}$ N.

Thalia Bank occupies a central position in Hu-i-tau bay, and its east end bears W. $\frac{1}{4}$ S. about 2 miles from Hu-i-tau point, and N. by E. $\frac{1}{4}$ E. from Dodd island; from thence it extends to the north-westward beyond the White rocks in the centre of the bay. The eastern end has $1\frac{1}{2}$ fathom on it; the western end dries. The north-east part of the bank is steep-to, the lead giving no warning.

Dodd Ledge, bearing from E. by N. to E.N.E. nearly $1\frac{1}{4}$ mile from Dodd island, or Pak-ting 北碇, has on it two patches of rock, one of which breaks, and the other has 6 feet over it at low water; from the eastern edge of the ledge, Scrag point, the east extreme of the land to the northward, bears N.E. $\frac{1}{4}$ N. There are two rocks, one with 3 feet, and the other with 6 feet on it,

lying North three-quarters and a mile respectively from Dodd island; and at half a mile N.W. by W. $\frac{1}{2}$ W. from the island, is a reef showing at half tide.

Tides.—In Hu-i-tau bay it is high water, full and change, at 12h. 15m.; springs rise 16 feet.

Directions.—Vessels requiring shelter during the North-east monsoon in this bay, will find good anchorage on its eastern side, between Oyster islet and Oyster rock, taking care to avoid the latter, which only shows at low water springs. There is also anchorage westward of Oyster islet in 5 fathoms, but the islet should not be brought to the southward of East, as a rocky ledge, with only 6 feet on it, lies 7 cables to the north-west of the islet.

Vessels requiring shelter in a southerly wind can run up the bay to the northward of the White rock and Thalia bank, and find anchorage in $5\frac{1}{2}$ fathoms at half a mile to the north-east of Flat island. To avoid the northern edge of Thalia bank, do not bring Flat island to the northward of W. by N. $\frac{1}{2}$ N.; and by keeping Oyster islet open northward of the fort, the bank will be avoided which extends from the north side of the bay.

There is a channel between the Thalia bank and Quemoy, but the ground is foul with several reefs; and it should not be attempted without some previous knowledge. To clear the south end of the Thalia bank, keep the chimney on the north end of Quemoy on a W. by N. $\frac{1}{2}$ N. bearing until the White rock bears North, then steer N.W. until the rock bears N.E. by E., when shape a course to pass half a mile from the points of the bays on the Quemoy shore.

The channel north of Quemoy has a depth of 8 feet in it, and therefore might be used at high tide; but no vessel should attempt it without a pilot.

The Coast from Hu-i-tau point trends 9 miles to the north-east to Chimmo point, and is low, the sand hills rising about 300 feet. Near the coast are two walled towns, the southernmost of which has a small pagoda near it. None of the bays afford shelter. H.M.S. *Reynard* tried that under Scrag point, but was compelled to use her screw to get out of it.

Chimmo Bay is between Chimmo and Yungning points, and its locality will be easily recognised when approaching from the eastward, by Mount Kusau and its pagoda Ku-sau-tah 姑嫂塔, which is 760 feet above the sea, and $1\frac{1}{2}$ mile from the beach on the north side of the bay. The mount is the most conspicuous land on this part of the coast, and a fine landmark in hazy weather. The shores of the bay, although barren, are very populous; and the inhabitants bear a bad character. The walled town of Yungning 永寧 stands on the northern shore.

On the south side of the bay, off Chimmo point, are two islets, named South and Pagoda, the channels between which, and between Pagoda and Chimmo point, are full of rocks. N. $\frac{1}{2}$ W. 6 and 7 cables' lengths respectively from South islet, are the two Chimmo rocks, which show at low water. When on them, the east end of Pagoda islet is in one with Flat reef, bearing S. $\frac{1}{2}$ W. To pass northward of these rocks, bring a large tree,* which stands half a mile from the beach in the north-west side of the bay, open westward of a remarkable

* This tree could not be made out.—*Henry M'Ausland, Master, H.M.S. Reynard, 1854.*

shoulder peak $3\frac{1}{2}$ miles at the back of it, bearing N.W., and when Yungning islet (off Yungning point) is in one with Junk head (the first point to the north-east of it,) the vessel will be to the westward of them; from these rocks to Yungning islet the distance is $1\frac{1}{2}$ mile.

This bay can only be termed a roadstead, and a dangerous one in the southerly monsoon. Yungning islet is steep-to, but a reef lies W. $\frac{1}{2}$ S. 3 cables from it, and covers at high water. Within the bay the depths shoal gradually, but vessels drawing 15 feet and upward must not bring Yungning islet to the southward of E. $\frac{1}{2}$ S.

Tides.—It is high water, full and change, in Chimmo bay at 10h. 20m. and springs rise 16 feet. The tide sets with considerable velocity along the coast, between Hu-i-tau and Chimmo bays; but both the period and the rate vary considerably with the monsoon; the state of the tide will be known by the numerous fishing-nets moored off the coast.

The Coast from Chimmo bay trends N.E. by N. 8 miles to Chungchi 祥芝 point, the southern point of entrance to Chin-chu harbour. Several sandy bays occur between these points, and afford shelter to junks, but from the number of rocks in and about them they cannot be recommended for square-rigged vessels. At $1\frac{1}{2}$ mile southward of Chungchi point is an islet with a building on it something like a bell.

Chin-chu Harbour or Taisan-chau 泉州.—Chungchi point is about 400 feet above the sea; sunken rocks extend 2 cables from it to the south-eastward. The entrance to the harbour is about 10 miles wide between this point and the town of Tongbu to the north-east, but its shores rapidly approach each other, so that its proper entrance may be considered to be not more than $4\frac{1}{2}$ miles wide between Chungchi point and the point North of it, and between which are the islands Tatoi 大隊 and Seatoi 小隊, with the Hewen rocks, above water, lying half a mile S.W. of the latter; these all lie in a N.N.E. and S.S.W. direction, and between them are the navigable channels to the Lockyung river entrance. Seatoi is a low barren islet; Tatoi, 358 feet high, is the highest land in this neighbourhood. The Seatoi bank, with $2\frac{1}{2}$ fathoms on it, extends about 2 miles to the eastward of Seatoi island; and an extensive sand, named the Boot, runs westward from Tatoi island to the entrance of the river.*

Pilots.—Chin-chu harbour is the only place where pilots can be obtained for Hai-tan strait or Hungwha sound, and it is advisable that all vessels bound there should take one, as the navigation is very intricate.

Passage Island lies N.E. $\frac{1}{4}$ N. $4\frac{1}{2}$ miles from Chungchi point, and to the eastward of it are three rocks, which cover at high water; the outermost rock bears E. $\frac{1}{2}$ S., half a mile from the island. A ledge also extends from the south-west point of the island, the outer rock of which is $1\frac{1}{2}$ cables from high water mark.

White Rocks.—N.E. $\frac{1}{4}$ N. about half a mile from Passage island are two White rocks, which are always partly uncovered; the channel between them is not safe. At three-quarters of a mile northward of the White rocks is Tahkut,

* See Plan of Chin-chu Harbour, No. 1,769; scale, m = $1\frac{1}{2}$ inches.

獺窟, i. e. Otter Hole, an island at high water a large town on it; and between them is a sunken rock, from which the highest part of the northern White rock bears S. by W. $\frac{1}{4}$ W. half a mile, and the summit of Tatoi W. by S. $\frac{1}{4}$ S.

Lynx Rock, with only 6 feet water over it, lies E. by S. southerly not quite half a mile from the highest part of Seatoi, with Tatoi summit bearing N. by W. $\frac{1}{4}$ W., and Passage island N.E. by E. $\frac{1}{4}$ E.

Taheen Rock is 2 cables to the S. by E. of the Lynx, and shows at low water; when upon it, Choho pagoda bears W. $\frac{1}{4}$ N., and Tatoi summit N. by W. $\frac{1}{4}$ W. The bottom between the Taheen and Hewen rocks is rocky and uneven, and in several places there are only 6 feet at low water; a channel through, however, is sometimes used by the opium vessels, when the wind is too far to the eastward to permit them to fetch between the Lynx and Seatoi; their leading mark is, the highest part of Hewen in line with Choho pagoda bearing W. $\frac{1}{4}$ N.

Mid-channel Reef.—Between Seatoi island and the Hewen rocks, rather more than a cable's length from the south-west point of the former, and a good half cable from the latter, is Mid-channel reef, three heads of which show at low water springs; it is about 2 cables in circumference, and from its centre the summit of Tatoi is in line with the west summit of Seatoi. Reefs also extend half a cable's length from Seatoi on its South, S.W., and eastern sides; thus rendering the channel between this island and the reef exceedingly awkward to a stranger.

Choho Reef.—A sandpit extends nearly $1\frac{1}{2}$ mile in an easterly direction from Choho pagoda 日湖塔, and from a reef lying on its northern edge the pagoda bears S.W. $\frac{1}{4}$ W., and is distant 6 cables, and the summit of Pisai island W. by N. $\frac{1}{4}$ N.

Ota Rock, which covers at high water, lies East half a mile from Pisai, and N. W. $\frac{1}{4}$ N. from Choho pagoda.

Tides.—It is high water, full and change, at Pisai island in Chin-chu harbour at 12h. 25m.; springs rise 17 feet.

Directions.—Kusau pagoda, 760 feet above the sea, is an excellent mark for recognising the locality of Chin-chu harbour, when approaching it from the southward. From a position about $1\frac{1}{2}$ mile to the eastward of Chungchi point steer North until Choho pagoda opens northward of Seatoi island bearing W. $\frac{1}{4}$ S., when it should be steered for on that bearing, and it will lead along the northern edge of Seatoi bank. The ship *Omega*, drawing 11 feet, struck upon a bank $1\frac{1}{2}$ mile to the eastward of Seatoi, but not less than $2\frac{1}{2}$ fathoms were found upon the Seatoi bank in March 1844; the southerly monsoon may, however, cause the sand to accumulate.

If running for the harbour from the northward, and intending to anchor to the southward of the Boot sand, after passing about three quarters of a mile south of Passage island, steer in with Choho pagoda W. $\frac{1}{4}$ S., until the peak on Tatoi island bears N. by W. $\frac{1}{4}$ W., and the eastern end of Seatoi island S.S.W. $\frac{1}{4}$ W., then haul to the southward, and pass a cable's length to the eastward of Seatoi. Round the south side of Seatoi at half a cable's length, and when its

western summit is in one with the highest part of Tatoi the vessel will be in the narrowest part of the channel, which is here barely a cable across.

Having passed Seatoi, a W.N.W. course will lead to the anchorage above Pisai islet in mid-channel. By keeping this islet to the westward of W. by N. $\frac{1}{2}$ N. the reef off Choho pagoda will be avoided; and the southern edge of the Boot will be cleared by not bringing Seatoi to the southward of E. by S. $\frac{1}{2}$ S.; the outline of this bank, however, is generally visible. The opium vessels run in between the Lynx and Taheen rocks, with the south extremes of Seatoi island and Ota rock in line with north extreme of Pisai. The anchorage is North about $1\frac{1}{2}$ or 2 miles from Pisai, where the channel is 3 cables wide.

If intending to anchor northward of the Boot sand, steer to pass northward of Tatoi island; and if drawing less than 15 feet, a vessel may run up until Choho pagoda bears S. by W. $\frac{1}{2}$ W., where she will have smooth water in any weather, as the Boot forms an excellent breakwater. The north edge of the Boot will be avoided by keeping the White rocks to the southward of East. There is a sunken rock lying $1\frac{1}{4}$ cable from the northern shore, and N. by W. $\frac{1}{2}$ W. from the summit of Tatoi. There is good anchorage in north-east or northerly gales in $3\frac{1}{4}$ and 4 fathoms, with the summit of Tatoi bearing S.E. by S.; but in a south-west gale the former anchorage is to be preferred. The Boot may be crossed by a vessel of light draught at high tide, but it should be sounded first, as the sands shift.

The entrance of the small river leading to the town of Ohin-chu bears W. by N. $\frac{1}{2}$ N. 3 miles from Pisai islet. On the left bank, near the entrance, is a circular fort, called Fah-shih 法石 Pau-tai 炮台, 4 or 5 miles above which is the town, standing on the north bank of the river. The channels to it are shoal and intricate, and the large junks have to wait in the neighbourhood of Pisai for tide before they can cross the flats, which are covered with artificial oyster-beds.

Pyramid Point, or Ta-tseh 大岩, at 3 miles eastward of Tongbu, is the southern point of entrance to Port Matheson, and when approaching it on a westerly bearing, it appears a bold black face of land, not in any way representing its name; but on a northerly bearing, or inside the point, it cannot be mistaken.

The Pyramid rock is connected with the point at low water, and to the S.E. of it is a rock which never covers. To the eastward of Pyramid rock are several reefs, from the outermost of which the Pyramid bears S.W. by W. $\frac{1}{4}$ W. 6 cables, the highest part of the land forming the north side of Port Matheson N. by E., and a cliff head at the head of the promontory (extending south-westerly from the above hills) is in line with a remarkable cone in the bay N. by W. $\frac{1}{2}$ W.

Anchorage.—Vessels requiring anchorage in the North-east monsoon will find it in the first bay westward of Pyramid point, where they will be sheltered to the eastward by the reef of rocks, mostly above water, extending south-east from the point, and forming a good breakwater; care must, however, be taken to avoid a sunken rock lying South a cable's length from the first point eastward of the walled city of Tongbu 崇武.

Port Matheson, called by the Chinese Gulai, or Siao-tsh 小峇, is the next inlet to the north-east of Chin-chu, the isthmus near the city of Tongbu being only a mile across. The port is 4 miles wide at entrance, and will afford tolerable shelter to vessels of about 12 feet draught, if the wind be to the northward of East; but it is only a roadstead, and that a bad one, in the southerly monsoon. There are no dangers in it, except a rock lying North 4 cables from the largest islet on the southern shore.

Meichen Sound, or Mei-chan 湄洲, the next inlet north of Port Matheson, is 6 miles across at the entrance, which may be recognised by the Ninepin rock, which lies nearly in mid-channel. A reef extends South from the Ninepin, and at the distance of a mile is a cluster of rocks, one of which, Square rock, does not cover at high tide; from thence the reef extends southwesterly $1\frac{1}{4}$ cable, and its outer part dries at low water.

East 6 cables from the Ninepin is a flat patch of rocks, awash at high water, and between this patch and Rogue's point is good anchorage in the North-east monsoon. H.M.S. *Plover* rode out a gale to the westward of the Ninepin, without much strain upon the cable, but with an uneasy sea. Anchorage was therefore preferred under Rogue's point; but since that period H.M.S. *Scout* found a rock here, which lies midway between the Ninepin and the extreme of Rogue's point, bearing from the former E. by S. $\frac{1}{4}$ S., and from the mound at the end of the sandy isthmus connected with Rogue's point, South. H.M.S. *Comus*, in August 1856, anchored in $8\frac{1}{4}$ fathoms, with the Ninepin bearing South, Rogue's point S.E. $\frac{1}{4}$ E., and a small white rock off Meichen village E. $\frac{1}{4}$ N.; but it was considered an unsafe anchorage during the southerly monsoon, and many rocks were seen in the sound which are not noticed in the chart.

N. by E. $\frac{1}{2}$ E., one mile from the Ninepin, is a rock which shows at low water, and from the highest part of Rogue's point bears S.E. by E. $\frac{1}{2}$ E. There is a passage between this rock and the Ninepin, but rocks extend a cable's length from the latter. Rogue's point may be approached without fear, except on its east side, where there is a reef lying rather less than a cable's length from the shore; a depth of $3\frac{1}{2}$ and 4 fathoms will be found at the distance of 3 cables from the sandy beach. One and a half mile South of Rogue's point is a patch with $4\frac{1}{2}$ fathoms on it.

Inner Harbour.—In the southerly monsoon, vessels will find a good harbour to the north-west of Saddle island, or Chuh-kan 竹竿, which bears N.W. by N. $3\frac{1}{4}$ miles from the Ninepin. In approaching it, pass southward of the south islet off Saddle island, and haul to the northward round the western islet, giving it a berth of a cable's length at high water to avoid a ledge. The ground is very uneven hereabouts, and there are only $2\frac{1}{4}$ fathoms water at a mile W.N.W. of western islet.*

N. by E., one mile from Saddle island, is a low Cliff islet, from the west point of which a sandbank extends $1\frac{1}{2}$ mile to the north-west; the south peak of Saddle island kept eastward of S.E. by S. will lead westward of it. When

* See Chart, East Coast of China, Sheet 5, No. 1,761; scale, $d = 1\frac{1}{4}$ inches.

Mound peak or Si-ting hiang 西亭鄉 (which is on the mainland, and 3 miles northward of Saddle island, with a walled town and pagoda near it) bears East, a vessel will be to the northward of this bank, and can haul in towards the town. W. by N. $\frac{1}{4}$ N., $2\frac{1}{2}$ miles from Mound peak, is a knoll with only 6 feet over it.

The junks use the channel between Mound peak and Cliff islet, and also pass between Mound peak and Meichen island. The former channel is deep, but requires personal knowledge; the latter is strewn with rocks, and in some places has not a greater depth than 9 feet. The sound runs back 10 miles to the northward of Mound peak, forming narrow isthmuses across to Pinghai bay and Hungwha sound.

Tides.—In Meichen sound it is high water, full and change, at 12h. 30m.; springs rise 17 feet.

Sorrel Rock, 60 feet high, bears E. by N. $8\frac{1}{2}$ miles from Rogue's point. A rock lies three-quarters of a cable's length southward of it.

Ping-hai 平海 Bay, the next inlet north-east of Meichen sound, is $6\frac{1}{2}$ miles wide at entrance, between the Rowan islands and Ping point, and carries a depth of 5 to 3 fathoms. Ping rock, 90 feet high and conical shaped, lies 4 cables to the southward of the latter point, and bears N.E. by N. 9 miles from the Sorrel rock; a sunken rock lies S.W. by W. a quarter of a mile from it.

The anchorage in this bay is in 3 fathoms, off the town of Ping-hai, with the Ping rock bearing S.E. by E. At 5 miles westward of the anchorage is a high range of hills, one of the peaks of which, named Marlin Spike, will form a good guide for this part of the coast. The bay runs back past the foot of the Marlin Spike range, but is shoal, there being seldom more than 2 fathoms to the westward of the range.

Reefs extend nearly a mile from the coast to the northward of the Ping rock.

Lou-tz 鷓鴣 Rock (i. e. the Cormorant) lies E.S.E. about $5\frac{1}{2}$ miles from the Ping rock, and between them, at $1\frac{1}{2}$ miles from the Loutz, are two sunken rocks, named Loutz shoal, from which the Ping is in line with Marlin Spike peak bearing N.W. by W. $\frac{1}{4}$ W., and the islet lying north-east of the Loutz is in one with the South Yit, E. $\frac{1}{2}$ N. There is a rock, which shows at half tide, lying N.N.W. 2 cables from the above islet, and another S. $\frac{1}{2}$ W. 8 cables from the islet, and East from the highest part of the Loutz.

Ookseu Islands.—The Ookseu or Wokeu-seu 烏坵嶼 group consists of three islets, the centre one being a barren rock joining the eastern island. The western island, the largest, is in lat. $24^{\circ} 59' N.$, long. $119^{\circ} 27\frac{1}{2}' E.$, and elevated between 200 and 300 feet above the sea. It is round-topped, with smooth sides, and bears from the Sorrel rock E. by S. $\frac{1}{4}$ S. $15\frac{1}{2}$ miles, and from the South Yit S. by W. $\frac{1}{4}$ W. $10\frac{1}{2}$ miles.* The steam-vessel *Nemesis*, drawing 5 feet, anchored under the eastern island, which is low, rugged, and sandy, with a large fishing village on it, and detached rocks off its east and west points. It

* A strong tide ripple, or reef, appeared to break about $1\frac{1}{2}$ mile W.N.W. of the western Ookseu island.—*Commander J. C. D. Hay, H.M.S. Columbine, 1848.*

is doubted, however, if there is shelter sufficient in a breeze for a vessel of greater draught.

Lam-yit 南日 Island, the southern and largest of the archipelago called the Eighteen Yits, is 7 miles long in an E.S.E. and W.N.W. direction, and fronts the deep and extensive gulf named Hungwha sound. The eastern peak, High Cone, 565 feet above the sea, and the highest point of the island, is in lat. $25^{\circ} 12' N$, long. $119^{\circ} 35' E$.

The south point of the island is a bold table-land, off which and connected at low water is South Yit islet, to the north-west of which will be found a snug and excellent anchorage in the North-east monsoon. On rounding, give the South Yit a berth of a quarter of a mile, and then haul up into the bay, being prepared to anchor directly the water shoals. N.W. 2 miles from the South Yit is a flat rock, which is always above water; and S. by E. 4 cables from this rock is a reef, awash at low tide. This is the only danger in the bay, and it will be avoided by keeping within $1\frac{1}{2}$ mile of the South Yit, should the vessel not fetch up into smooth water after rounding it.

Lam-yit Channel is to the westward of Lam-yit island, and a vessel proceeding through it towards Hungwha sound from the anchorage on the south side of Lam-yit, must be careful on the flood to steer well to the south-west to avoid a sandbank extending $2\frac{1}{2}$ miles in a southerly direction from the west point of Lam-yit. From the southernmost edge, in $2\frac{1}{2}$ fathoms, the South Yit bore E. $\frac{1}{2}$ S.; its western edge will be avoided by keeping Lam point (the west point of the island, which will be known by its three chimneys) to the eastward of North.

H.M.S. *Plover* examined this bank three different times, and on each occasion found a change. On one occasion a passage was discovered between it and the point: the outline of the bank, however, may be detected by discoloured water. On the western side of the channel there is also a rocky patch of $1\frac{1}{2}$ fathoms, the eastern edge of which bears S. by W. 2 miles from Clam islet (the largest islet between Lam-yit and the main;) from its southern edge, Lam point bore E. by N.

Anchorage.—The *Plover* rode out a strong N.E. gale between Lam point and Clam islet; but better shelter will be found to the southward of Lam point, where the junks anchor. The outer rock off the point always shows, and may be rounded close to; but it must not be brought to the westward of N.N.W.; as the water shoals suddenly, and there is a sunken rock in the bay at 6 cables to the southward of it. The best position is as close up under the point as the vessel's draught will permit. There is anchorage for vessels of large draught in 4 or 5 fathoms, at $1\frac{1}{2}$ mile to the northward of the point.

Hungwha Sound.—Besides Lam-yit island (which, as already stated, fronts Hungwha sound), there are many islands and rocks within the sound bordering its shores, the principal ones being near its entrance points. The only passages that must be used to enter it are, the Lam-Yit and Hungwha channels, and Hai-tan strait.

Directions.—If bound through the Lam-yit channel for the entrance of the Hungwha or Hingwha 興化 river, which flows into the western part of

Hungwha sound, steer northerly 7 miles from Lam point, when the vessel will be one mile to the northward of Knob island, and should then steer for Pitew point, which bears N.W., 7 miles from the Knob. A patch of rocks lies to the north-west of Knob island, the eastern one of which bears N. by W. 8 cables from the island, and the north-westernmost N.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ mile; a part of them always show. There is another patch off Pitew point, the south-east end of which bears E.S.E. 2 miles from the south-east corner of the fort. There is good anchorage in 6 fathoms with the corner of the fort on Pitew point bearing E.N.E. The entrance to Hungwha river, leading to the town, bears W. by S. from Pitew point; the depth shoals to 6 feet at low water at 5 miles from the fort. There was a piratical establishment on the main, S.W. from Pitew point.

A vessel leaving Hungwha sound, and intending to pass northward of Lam-yit island, should use the channel north of the Passage islands, which are three in number, and bear N.N.E. 5 miles from Lam point. Between Lam point and these islands is Cliff island, in the vicinity of which are several reefs, rendering the channel between it and Lam-yit, and between it and the Passage islands, precarious. A ledge extends 2 cables in a westerly direction from the south-west point of the west Passage island.

The channel to the northward of the Passage islands* is 4 cables wide, and on its northern side is a rock, with a reef, which shows at low water, lying $1\frac{1}{2}$ cable to the westward of it. North of the rock $1\frac{1}{2}$ cable is a small islet; and 4 cables north of the islet is Rugged island.

The north-east Passage island is a bold bluff, steep-to on its north side; from thence a vessel may steer to pass either north or south of White island, which bears East $4\frac{1}{2}$ miles from the Passage islands. If passing south of this island, take care to avoid three rocks, named the Hung, which cover at first quarter flood, and bear S. by W. $1\frac{1}{4}$ mile from it. E. by N. $2\frac{1}{2}$ miles from White island is in the southern edge of a reef extending three-quarters of a mile from Kerr island; † having passed which, haul to the northward, and work up inside Ohim island, to the westward of which there are no dangers, except a rock at the entrance of Vangan 萬安 inlet, which may be avoided by keeping $1\frac{1}{2}$ cable from the shore. Here vessels will have smooth water, protected from the easterly swell by Ohim island. On the south point of Vangan inlet there is a walled town and pagoda.

Hungwha Channel is to the north-east of Lam-yit island, and its southern side is bounded by the Eighteen Yits, and its northern side by Sentry, Reef, Sand, and Chim islands.‡ The first two of these four last are called Tong-seu

* H.M.S. *Salomander* encountered a frightful race and show-show water in this channel, November 1861.

† The reef on the main, bearing E. by N. from White island, is very dangerous, and extends nearly 2 miles off shore; it is quite covered an hour after low water. There is good anchorage in the bay to the N.E. of the reef.—Commander J. D. Hay, H.M.S. *Columbine*, 1848.

‡ A rock, small and steep-to, with only a few feet water over it, is said to lie in Hungwha channel, nearly midway between Vangan point and the N.E. Yit, with Vangan pagoda bearing E. by E. and White island W.N.W. The Master of the opium vessel who discovered this danger sounded on it with a boathook. There are also many dangers between Hungwha sound and Hungwha channel, and the chart of this part is not strictly to be relied on; for instance, the Cliff islands and North Yit do not exist; there is but one Cliff island with rocks detached off its south-east part, which may be the south-west Cliff island marked on the chart. There are

通嶼. On no account ought vessels to stand in among the Yits, as the ground is very uneven. Triangle Yit, with a reef to the eastward of it, lies $1\frac{1}{2}$ mile to the S.E. of the High Cone peak on Lam-yit island. Cap Yit, the south-easternmost of the group, lies E.N.E. 4 miles from High Cone peak; and 2 miles S.E. from Cap Yit is a group of low rocks, named Scattered Yits, some of which are always above water. Double Yit lies N.E. $1\frac{1}{2}$ mile from Cap Yit, and the channel between it and Sentry island is 3 miles wide. N.N.E. 4 miles from Double Yit there is a remarkable white island, named Sand island, called Ang-koi-sen **應該嶼** by the pilots, with sandy beaches and detached hills.

Chim island, or Chau-seu, the highest island in this locality, rises with sloping sides into two peaks, one of which, 640 feet above the sea, has on it three chimneys, the usual pirate signal along the coast of Fuhkien province. At 3 miles to the S.E. of Chim island, and $1\frac{1}{2}$ mile northward of Reef island, are four rocks,* with reefs interspersed, called Chim bank.

Directions.—Entering the Hungwha channel from the eastward, pass between Double Yit and Sentry island, and to the westward of Sand island and the rocky islets on its north-west face, off which there is anchorage, should daylight or the tide fail; but the best shelter is off Station island, to the northward of Chim island. On no account whatever pass between Sand, Sentry, Reef, and Chim islands, as this locality has not been sufficiently examined, and beware of the reefs to the eastward of Reef island.

Hai-tan 海壇 Island.—This large and irregular shaped island lies near the mainland between the parallels of $25^{\circ} 24'$ and $25^{\circ} 40'$ N. Its northern part is high, the peak of the Kiangshan hills rising 1,420 feet above the level of the sea, while the eastern and western shores are low, and indented by deep sandy bays. Numerous small islands and rocks occupy Hai-tan strait, the channel between the island and the coast, and although it is not to be recommended, being very intricate, yet the junks invariably use it; one was found lying there, having been detained 27 days waiting for an opportunity to get out at the northern end.†

Hai-tan point, the south extreme of Hai-tan island, is a rugged, sandy headland, with large boulders sticking up here and there. Off the point are several rocks a little above high water, and a sunken rock lies 7 cables eastward of them, and nearly 6 cables from the shore. The best mark to avoid this rock is not to haul into the south-east entrance of Hai-tan strait until the rocks off Hai-tan point bear E.N.E. Station island is $3\frac{1}{2}$ miles to the north-west of this point, and the south coast of Hai-tan between is shoal, with detached reefs, and should not be approached within a long mile. The reef lying to the westward of Station island is covered at high tides.

From Hai-tan point the south-east coast of the island trends N.E. by E. $6\frac{1}{2}$

two dangerous rocks, awash at half tide, between Clifty island and Red Yit, in line with the former and a little to the northward of the latter, and directly in the way of navigation. The Hung rocks are somewhat out of position, being more to the eastward of Red Yit.—*Charles G. Johnston, Master of H.M.S. Bittern, 1856.*

* The chart only shows two.

† See Plan of Hai-tan strait, No. 1,385; scale, m = 1 inch.

miles to Hae head, and between these points is a deep sandy bay, with several detached rocks, the most remarkable of which, Trite island, forms in three peaks. S.½E. 2 miles from this island is South reef, portions of which are visible, unless the tides are very high, and the water smooth; from it, Chim island bears W. by S., and Turnabout island N.E. by E.½E.

Between Hae head and Tan point, 7 miles to the N. by E., is Hai-tan bay, a deep sandy bight, with numerous rocks both above and below water. Tan point, which is a low cliff, with a mound at the back of it, forms the south extreme of Kwing bay; and at 1½ mile to the eastward of it are the Tan rocks, some of which are always visible. Kwing island, known to the natives as Ho-lo-6 葫蘆島, from its resemblance to a gourd, lies a mile to the northward of Tan point, and reefs extend in a south-easterly direction a mile from its eastern side. The channel between the island and the point is much obstructed by reefs at its western end, and the swell rolls home to the Hai-tan shore. Between Kwing and Hai-tan is another inlet; but the tide rushes through these channels with such velocity that they ought never to be taken.

Directions.—A vessel approaching the south-east entrance to Hai-tan strait from the northward, after rounding Hae head, will avoid the South reef by passing about half a mile to the southward of Trite island. Junks occasionally take shelter under Hae head, and it is said that some vessels have done so in the North-east monsoon; it will, however, be found much exposed, should the wind haul to the southward of East.

If entering from the southward, pass about a mile to the eastward of Chim bank, and when the northernmost of the rocks bears W.S.W. one mile, steer about N.W. by W., until Junk Sail rock bears North, to avoid a sand spit which extends from the point north-west of Station island, and then haul up for Junk Sail, from which a reef extends half a cable's length both to the southward and to the westward. N.W. by W. a mile from Junk Sail is Pass island, from which a sandbank extends in a southerly direction, and its extreme end bears from the west point of Junk Sail S.W. by W.¼W., and the channel between is rather less than half a mile wide. A reef of rocks, showing at half tide, lies N.E. 3 cables from the summit of Pass island. Keep to the eastward of this reef, and between it and a small inlet lying 4 cables to the N.N.E., having a mud spit with rocks extending S.S.E. 3 cables from it; nor can the inlet be approached within a cable's length of high-water mark on its western side.

Having cleared this part of the channel, steer N. by W.¼W., to pass eastward of Flag island, which has a spit extending South 3 cables from it, and a ledge of rocks off its north-east point, on which H.M.S. *Plover* lost her false keel. From thence bring the east end of Flag island in line with the west end of Pass island bearing S.½E., and it will lead in mid-channel 5 miles above Flag island. Care, however, must be taken not to open them, as there is a reef, which shows at low water, lying 1½ mile northward of Flag island, and from it a chimney hill on Hai-tan bears E. by N.; by keeping the chimneys on Chim island just open westward of the west point of the inlet lying N.E. of Pass island, it will be avoided.

When Pillar rock, or Shih-pai-yang 石牌洋 (on the Hai-tan shore,

N. by E. $6\frac{1}{2}$ miles from Flag island,) bears N.E. by E., steer N.W. by W. until Slut island or Tang-sen 糖嶼 bears N. by W., when it may be steered for, passing westward of Tower rock, which lies N. $\frac{1}{2}$ W. 8 miles from Flag island, and has a reef $1\frac{1}{2}$ cable westward of it. The summit of Slut bears N. by W. $\frac{1}{2}$ W. 4 miles from Tower rock, and between them are several reefs; the west end of the reef (part of which always shows), nearest the rock, bears N. $\frac{1}{2}$ W. 8 cables from it.

N. by W. $2\frac{1}{2}$ miles from the Tower rock is a reef which only shows at low water; and when on it, the Cow's Horn, or Niu-kioh-shan 牛角山 (a remarkable peak on the main outside the strait) bears N. by W., and is in line with the east end of Slut island, Pillar rock bears S.E. by S., and Tower rock is in line with the south-west point of Hai-tan. The channel out of the strait is between this latter reef and a Black-peaked rock, bearing from the reef W. by N. $\frac{1}{2}$ N. three-quarters of a mile. Rocks visible at low tide extend from the Black-peaked rock south-easterly a quarter of a mile, and there is also a reef lying half a mile to the southward of it. Both these reefs on the western side of the channel will be avoided by keeping the summit of Slut to the northward of N. $\frac{1}{2}$ E.; there are several reefs between Black-peaked rock and Chung island.

The best channel out of Hai-tan strait is to the eastward of Slut island, between Slut and Shingan islands. Reefs extend from both shores, narrowing the channel to 4 cables' length. When working through the narrows, the summit of Slut must not be brought to the southward of S.W. $\frac{1}{2}$ S., as a rocky patch, with only 9 feet on it, lies 7 cables to the north-east of the island. N.N.E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from the summit of Slut island is a sunken rock, on which the sea breaks at low water; when upon it, the Cow's Horn bears N.W. $\frac{1}{2}$ N. Shingan island, on the eastern side of the narrows, trends away to the N.E., breaking into detached fragments, and giving a little more room for a board; but the main difficulty is the tide, which, after a vessel is through the channel, affords little or no help, so that, unless there is a slant of wind, she is liable to be driven among the small islets north of Hai-tan, and if a dull sailer, and unable to clear the dangers in one tide, she will be compelled to bear up before dark.

There are three other channels between Slut island and Hai-tan island, none of which, owing to the height of the islands, and consequent liability to be becalmed, are so good as the one described. The flood tide enters through all these, but with great irregularity; it should, however, be observed, that while the *Plover* was employed on this portion of the survey, a very severe typhoon occurred to the northwards, which may in some measure have caused the difficulty experienced by her getting out at this end.

Tessara Islands are a group of four islets lying N.N.E. 6 miles from Slut island, and between them and the Cow's Horn the depth is 6 fathoms. A reef extends S.S.E. 3 cables from the easternmost islet.

Red Rock is a small islet with reefs about it, lying S.E. by S. 3 miles from the Tessara islands. Vessels should not close the Hai-tan shore to the eastward of this rock, as the intervening space between it and the Warning rocks (which are about 80 feet high, and lie 7 miles to the eastward) is strewn with reefs.

Norton Rock, about 50 feet high, with a rock awash half a mile to the westward of it, lies East $6\frac{1}{2}$ miles from the Tessara islands.

White Island.—At $7\frac{1}{2}$ miles to the northward of the Tessara is the southernmost of a group of rocks and shoals, which extend hence all the way to Sand peak. Junks anchor under the largest, named White island, but there is almost always a heavy ground swell setting into this bay. A sandy beach extends from the Cow's Horn to Sand peak, a distance of 16 miles, and a vessel may stand towards it until the group just described is reached, which it will be advisable to keep outside of, taking care to avoid a rock lying 9 cables eastward of White island.

Sand Peak.—Under Sand peak the banks at the entrance of the river Min commence; 3 fathoms will be found at 2 miles from the shore, and boats may find their way into the Min by the channel between Sand peak and Woufoa island, but the navigation even for them is difficult, and entirely impracticable to any but of such light draught as can go over sands that dry at low water. This, however, when the tide will admit, will be found the best channel for a vessel lying at the White Dogs to communicate with Fuhchau. There is a large fishing establishment under Sand peak.

Turnabout Island, Niu-shan, or Goo-san 牛山, lying E.S.E. about 4 miles from Hae head, is in lat. $25^{\circ} 26' N.$, long $119^{\circ} 58' 42'' E.$; there are two small islets off it. A sunken rock, on which the sea breaks occasionally, lies 2 cables to the northward of the island.

White Dog Islands (Pih-kiuen 白犬, or Pih-kau 白狗, both names meaning White Dogs) bear N.N.E. 23 miles from the peak of the Kiang-shan hills on Hai-tan island, and N.E. $\frac{1}{2}$ N. 15 miles from Norton rock. They consist of two large and one smaller islet, named Middle Dog, South Dog, and Tong-sha island.*

Tong-sha, the western island, and the largest of the group, has a reef of rocks running off its western extreme, terminated by a square islet called the Breakwater; and a half-tide rock lies a cable's length from the western point of Village bay, on the south side of the island. The highest part of the island is flat-topped, and 590 feet above the sea. Fresh water may be obtained in small quantities.

Rocks and reefs extend both northerly and westerly from the Middle Dog, but the outer ones always show; a rock on which the sea generally breaks lies N.E. by E. $\frac{1}{2}$ E. $1\frac{1}{2}$ mile from its north-east point.

The channel between the Middle Dog and Tong-sha is safe. The islands are inhabited by a few fishermen, and are occasionally visited by pirates.

Anchorage in the North-east monsoon, for vessels of any draught, will be found under Tong-sha island. Small vessels will find good shelter in 18 feet, close under the Breakwater, and here whole fleets of Chinese junks remain during foul weather. As the water decreases gradually towards Tong-sha, vessels of greater draught may approach as convenient, bearing in mind that the rise and fall is 18 feet.

* See Chart of River Min, with views, No. 2,400; scale, m = 1.2 inches.

Directions.—The passage from Lam-yit to the White Dog islands may be considered as the most difficult portion of the coast that a vessel has to contend with in the North-east monsoon, and it is believed there are few men who know the coast of China but will allow that Turnabout island is well named. The attempt of the flood to force its way through Hai-tan strait forces the water back, and occasions a strong current off Kwing bay, at the north-east end of Hai-tan. It is a great misfortune that this bay does not afford shelter, as it would prove an uncommonly good half-way house; it is, however, one of the worst places on the coast of China the *Plover* dropt anchor in, being full of rocks, with a heavy swell. Sailing vessels have, therefore, no alternative but to stand boldly off, and trust to a slant on the Formosa side, or to take the Hai-tan strait. The open sea is, however, preferable, notwithstanding that some vessels have got successfully through the strait; yet it requires local knowledge and a handy vessel to prevent great detention.

PESCADORES ISLANDS.

The Pescadores or Ponghou 澎湖 archipelago consist of twenty-one inhabited islands, besides several rocks, and extend from lat. $23^{\circ} 11\frac{1}{2}'$ to $23^{\circ} 47'$ N., and from long. $119^{\circ} 16'$ to $119^{\circ} 40'$ E. From their basaltic formation the land is generally flat, and no part of the group is 300 feet above the level of the sea. The two largest islands, named Ponghou and Fisher, lie near the centre of the archipelago, and between them is an extensive and excellent harbour. The general depth of water on the western side of the archipelago is 30 and 35 fathoms; there are, however, some places where there are 60 fathoms. To the eastward of the group the depth is 40 fathoms, and the current strong.*

Junk Island, the southernmost island of the Pescadores, is 2 miles long, east and west, and $1\frac{1}{4}$ mile wide; the depths of water in its vicinity being 15 and 16 fathoms. The highest part of the island is 260 feet above the sea, and from it High island bears N.W. $\frac{1}{4}$ N. $8\frac{1}{2}$ miles, Reef island N.E. by E. $5\frac{1}{2}$ miles, and East island E. by N. 13 miles. A reef of rocks extends 6 cables from its south-west side, and within them is a small artificial harbour for junks. Its eastern face is fronted by bold cliffs; and its western extreme is a long shelving point.

Reef Islands are three in number, one of which, Steeple island, is a remarkable pyramid. The other two are rather more than a mile each in circumference, and are connected at low water by a stony ledge; reefs extend half a mile to the southward of them, and South from the west end of the eastern island is a pyramidal rock rising 80 feet above the sea. There is also a low flat rock, nearly level with the water's edge, lying S.W. by S. $1\frac{1}{2}$ mile, and a small peaked rock, with a reef, to the northward of it, lying S.E. 2 miles from the east end of this island.

East Island is $8\frac{1}{4}$ miles to the eastward of the Reef island, and between them,

* See Chart of Pescadores Island, No. 1,861; scale, $m = 0.6$ of an inch.

and distant $5\frac{1}{2}$ miles from the latter, is a smaller island, named Pe-ting, $1\frac{1}{2}$ mile in circumference, with a reef extending in an easterly direction, not quite a mile from its north point. East island is $2\frac{1}{2}$ miles in circumference, and has a small islet lying half a mile from its north-western shore.

Nine-foot Reef lies N. by E. $\frac{3}{4}$ E. $12\frac{1}{2}$ miles from the north end of East island, and from it Dome hill, on Ponghou island, bears W. by N. $\frac{1}{2}$ N. $10\frac{1}{2}$ miles, and Three island N. N. W. $\frac{1}{4}$ W., 4 miles. The lead gives no warning; but if there is any tide, the ripple will be sufficient to point out its position.

Rover Group consists of two large islands, Pa-chau and Tsiang, and several rocks, and are sufficiently extensive to afford shelter under their lee in either monsoon. The general depth is 7 and 8 fathoms on the southern, and 13 and 14 fathoms on the northern shore. From the highest part of the group, the lighthouse on the south-west point of Fisher island bears N. by W. $10\frac{1}{2}$ miles.

Pa-chau 八罩, the western island, is $2\frac{1}{2}$ miles long, north and south, and a mile broad, and its summit, which is near the eastern shore, rises like a dome with a large pile upon it. S. W. $\frac{1}{4}$ W. $2\frac{1}{2}$ miles from the summit is the end of a reef extending in a westerly direction from the south point of the island, and part of it shows at all times of tide. There is also a reef which covers at high water, bearing W. by S. $\frac{1}{4}$ S. from the summit, and lying 2 cables from the shore. The north-west point of the island is not steep-to; and a rock, which always shows, lies off the north-east point, having a channel 4 cables wide between it and the point.

Tsiang 倉, the eastern island, is only $1\frac{1}{2}$ mile long N. E. and S. W., and about $1\frac{1}{4}$ mile broad, and the channel between it and Pa-chau is barely a cable wide. The east point of this island is remarkable from an isolated cliff, called Rover Knob, 100 feet high, which forms the most striking feature in the group; at 7 cables eastward of the cliff is a ledge of rocks, part of which are always above water.

Directions.—The channel between the Rover group being so narrow and intricate, the only excuse for a stranger using it would be his vessel being caught at anchor to the northward of the group in a breeze from the northward, and unable to fetch clear either eastward or westward. On the north-west face of Tsiang are two islets, under the southern of which a small vessel might find shelter in a northerly wind, taking the precaution not to stand too far into the bay, as there are only 6 feet water at 2 cables from the shore. On the west end of the island, which is a cliff, are three embrasures.

In the centre of the southern part of the channel is a small rock with a reef extending southerly half a mile from it. The passage out is to the eastward of this rock, and the channel is a quarter of a mile wide. E. by S. $4\frac{1}{2}$ cables from the small rock is a reef which may always be detected from the mast head, as well as two other patches lying respectively 4 and 7 cables to the eastward of it.

High Island, bearing W. by S. $\frac{1}{4}$ S. $9\frac{1}{2}$ miles from the highest part of Pa-chau, is dome-shaped, 247 feet high, and three-quarters of a mile in circumference. At one mile to the eastward of it is a low flat island, and between the two are several rocks, one of which has a remarkable gap in it, and rises 60 feet above

the sea. A rock, nearly level with the water's edge, lies S.E. $\frac{1}{2}$ E. $1\frac{1}{2}$ mile from the summit of High island.

Yih-pan Island, 158 feet high, 2 miles in circumference, and uneven in appearance, is 4 miles to the northward of High island, and S.W. $\frac{1}{2}$ S., 12 miles from the lighthouse on the south-west end of Fisher island.

Table Island bearing S.S.E. $\frac{1}{2}$ E. nearly 5 miles from the lighthouse on Fisher island, is aptly named, the summit being a dead flat 200 feet above the sea; near its south-west end is a sudden fall nearly to the sea level, giving it at a short distance the appearance of two islands. The island is not quite 2 miles long, in an E. by N. and W. by S. direction, and is seldom 3 cables wide. The 2 fathoms line extends 2 cables from its eastern extreme.

Tablet Island, lies about a mile to the northward of Table island, and between them the depth is 12 to 19 fathoms. A shoal, with only 9 feet least water upon it, extends N.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ mile from the north-west side of the island, and from its south-west edge, in 4 fathoms, the south end of the island bears S.E. $\frac{1}{2}$ E.; from its north-east limit the north point of the island bears S.E. by E.; and from the north-western limit Dome island bears N.E. by E. $\frac{1}{2}$ E.

Ponghou Island is $9\frac{1}{2}$ miles in extent, in a north and south direction; it is, however, separated into three portions by narrow channels, which have only 2 feet in them at low water, and are further blocked by stone weirs. The whole of the western face of the island is fronted by coral reefs. On its south-eastern side, between Hou and Leechin points, are two bays with fishing villages, either of which will afford anchorage in the North-east monsoon. The best shelter will be obtained in the northern bay of the two, as it is protected by some rocks,—the reefs lying off which may be seen from the mast head, as the water is very clear. Dome bay, on the south-west side of the island, will also afford good anchorage in 6 fathoms.

Makung Harbour is formed at the south-west part of Ponghou island, and although much confined by coral reefs, it has sufficient depth for vessels of large draught. The town of Makung stands on the north side of an inlet, close to the north-east of the entrance, and will be easily recognised by a citadel and a line of embrasures. The large junks waiting for a favourable wind to take them to Formosa, anchor to the south-west of the town in 7 and 8 fathoms water, with Black rock lying midway between Fisher island and Makung, bearing N.E. by N. The junks belonging to the place lie close to the town, in a creek to the north-eastward of the citadel.

The harbour runs back 3 miles to the eastward from Chimney point, the south point of entrance, on which is an old Dutch fort. The southern shore is low, and on Dome hill, which is 154 feet above the sea, and the highest part of the land hereabouts, is a large pile of stones; the land between the hill and Chimney point is low, and in two places less than a cable across. Dome hill overlooks Dome bay on the south-west face of the island, in which there is a village and a fort. The isthmus immediately eastward of the village is low enough for the sea to break over it at high water during a south-east gale. The *Plover* anchored with Chimney point bearing N.W. $\frac{1}{2}$ W. distant 6 cables, which is also the width of the harbour here.

Within the harbour there are four coral patches, awash at low water springs,

but they may always be detected from the mast head in time to avoid them. From the westernmost patch Chimney point bears N.W. by W. $\frac{1}{2}$ W., and Dome hill S. by E. $\frac{1}{2}$ E.; the next patch lies a quarter of a mile farther eastward, with the fort on Chimney point N.W. by W. $\frac{1}{2}$ W. and Dome hill South; from the next patch the fort bears N.W. $\frac{1}{2}$ W., and the hill S. $\frac{1}{2}$ W.; and from the fourth patch the fort bears N.W. $\frac{1}{2}$ W., and the hill S.W. by S. They are all small in extent, and steep-to.

Directions.—In running for Makung harbour from the westward, pass about half a mile to the southward of Li-tai-tah point, the south extreme of Fisher island, and then steer E. $\frac{1}{2}$ N. for the town of Makung, which, as before observed, may be recognized by a citadel and a line of embrasures. The only dangers to be avoided in entering this passage are, the shoal with 9 feet on it, extending N.W. $\frac{1}{2}$ W. $1\frac{1}{2}$ mile from Tablet island; and a reef, just awash at high water, at half a mile westward of Dome island. Flat island, which lies 2 cables westward of Chimney point, is also surrounded by reefs to the distance of a cable's length from high water mark.

Fisher Island, which, in a collection of voyages in Dutch published in 1726, is called D'Visers island, lies to the westward of Ponghou, and between them is the excellent and extensive harbour of Ponghou. The island is 5 miles long, north and south, and $3\frac{1}{2}$ miles broad. The south-east point, Siau head, is a bold cliff, rising 170 feet above the sea. A reef, which breaks at low water, extends 7 cables from the western shore of the island, and its outer extreme bears N. by E. $\frac{1}{2}$ E. from the lighthouse.

Light.—A fixed white light is exhibited at 225 feet above high water, from a lighthouse standing on the south-west extreme of Fisher island; but as part of the windows are glazed with oyster shells, and the apparatus very rude, it will not be seen much farther off than a mile.

The lighthouse, 30 feet high, was built 90 years ago by subscription, and the expense of lighting is defrayed by a port charge of a dollar upon each junk entering Makung harbour.

Anchorage.—Vessels seeking shelter in a north-east gale will find smooth water off the southern shore of Fisher island between the lighthouse and Siau head, where there are two sandy bays; in the eastern bay is a fort or line of embrasures, and in the western a run of fresh water, except during the dry season.

Niu-kung bay, between the north end of Fisher island and Pehoe island, will afford shelter in the South-west monsoon. The north-east point of the former island is a table bluff with reefs, which cover at high water, extending 2 cables in a north-easterly direction from it.

Ponghou Harbour.—The eastern coast of Fisher island trends to the northward from Siau head, and forms several small bays, which are steep-to to a cable's length of the beach, until $2\frac{1}{2}$ miles north of the head, when reefs extend nearly 3 cables from the shore. To avoid these reefs, the fall of Siau head must not be brought southward of S. by W. $\frac{1}{2}$ W. after Makung citadel opens northward of the Black rock, which lies N.E. $\frac{1}{2}$ E. $1\frac{1}{2}$ mile from Siau head, and part of it is always uncovered. When passing eastward of this rock, keep

within 4 cables' lengths of it, as coral patches extend some distance from Ponghou island.

The *Plover* anchored at about 3 miles northward of Simu head, with Black rock bearing S. by E. $\frac{1}{2}$ E., and the highest part of Ta-tsang 大倉 island E. $\frac{1}{2}$ N.; in the bay abreast of her were two runs of good fresh water. In working up for this anchorage, to avoid the coral reefs which extend from the Ponghou shore, do not stand farther eastward than to bring the Black rock S.S.W. The harbour to the northward of this anchorage is much choked with coral patches. There is a passage out to the northward between Fisher island and Pehoe island, and it may be used on an emergency by vessels of 15 feet draught, but a local knowledge is necessary to render it available.

The archipelago, to the northward of Fisher and Pehoe islands, does not afford any inducement for a vessel to enter it. The external dangers therefore will only be noticed.

Tortoise Rock, 9 feet above high water and steep-to, lies about $2\frac{1}{4}$ miles from the north-west point of Fisher island, and N. by E. $\frac{1}{2}$ E. $7\frac{1}{4}$ miles from the lighthouse. There is a shoal patch of $1\frac{1}{2}$ fathoms at 6 cables S. $\frac{1}{2}$ E. from the rock, and N.W. $\frac{1}{2}$ N. from the north-east point of Fisher island.

Sand Island, three-quarters of a mile long north and south, and a quarter of a mile broad, bears N.E. by E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from the Tortoise rock, and will be known by a hummock which rises on the low land in the centre of the island, and also by its yellow appearance; a rock lies off its south-west end, and reefs extend north-westerly 3 cables from its north-west point. At half a mile eastward of this island is a flat black islet, and to the northward of it a cluster of stones, some of which are always above water.

Bird Island bears E.N.E. from Sand island, and a long sandy point, off which is a small sand island, with a house upon it, forms its southern extreme. On the west point is a low hill, connected with the rest of the island by a sandy isthmus.

Shoal water extends 3 miles to the northward from the north point of Bird island; and near its centre is North island, which has a house upon it to shelter the fishermen, and upon a reef half way between them is another house. The northern edge of the shoal water uncovers at low tide, bearing from N.N.W. $\frac{1}{2}$ W. to N. $\frac{1}{2}$ W. from North island distant $1\frac{1}{2}$ mile; and from the reef at its west extreme, which is steep-to (for the lead gives no warning), Sand island bears S. by W. From the west point of Bird island to this reef are many reefs, which will be avoided by not bringing Sand island to the westward of S. by W. until the west point of Bird island bears eastward of E. by S.

Anchorage.—Shelter during a north-easterly wind might be found on the west side of Bird island; and from southerly winds, to the northward of the reefs extending from the north point of the island.

N.W. Outlier is a shoal patch of 5 fathoms, lying N. by W. $\frac{1}{2}$ W. from Sand island and West from North island.

Sable Island, bearing S.E. by S. 5 miles from the north-east end of Bird island, is a small islet with a sand patch on its south cliff, and surrounded with rocks. It is nearly connected with the two islands to the southward of it by reefs at low water; the southern island of the two has a large village on it.

PESCADORES ISLANDS.

Organ and Ragged Islands.—Organ island, bearing S. by E. $\frac{1}{2}$ E. 3 miles from Sable island, has a reef lying N.E. $\frac{1}{2}$ N. one mile from it, and from which Sable island bears N.W. by N. Ragged island is nearly a mile S.E. by E. from Organ island.

Round and Three Islands.—Leechin point, the eastern extreme of Pong-hou, is low and shelving, and at $1\frac{1}{2}$ mile eastward of it is Round island, bearing S. by E. $\frac{1}{2}$ E. $3\frac{1}{2}$ miles from Ragged island; and S. $\frac{1}{2}$ E. $1\frac{1}{2}$ miles from Round is Three island. N.W. by W. $\frac{1}{2}$ W. from Three, and S.W. from Round island, is a reef which covers at half tide. Between Round and Organ islands are several over falls.

Tides.—It is high water, full and change, in Makung harbour at 10h. 30.; springs rise $9\frac{1}{2}$ feet, and neaps 7 feet. The tidal streams among the Pescadores run with great strength, but they are much affected by the prevailing winds. H.M.S. *Plover*, during the southerly monsoon in August, sometimes experienced a stream of 4 knots per hour on the flood running to the northward; whilst, with the ebb, the current slackened for two and three hours, but seldom ran with any velocity from the northward. Vessels, therefore, navigating in this neighbourhood, may safely allow that the effect of the current and tidal stream together will set them, according to the prevailing monsoon, 17 miles in one tide. Tide races are common, and overtop with great violence.

Formosa Banks occupy a large space on charts to the south-west of the Pescadores, and as they have not been surveyed, and there is at present no account of them, they should be approached with great caution. They appear to trend in the direction of the Pescadores channel, and to carry 5 to 10 fathoms water. There is, however, probably less water over them, for Captain Livingstone, of the ship *Sea Star*, of Glasgow, reports that his vessel struck the ground in lat. $23^{\circ} 19' N.$, long. $118^{\circ} 53' E.$, and carried away part of her keel. The depth he considered to be about 15 feet, and High island bore E. $\frac{1}{2}$ S. about 20 miles.*

* Nautical Magazine, p. 54, January 1852.

CHAPTER V.

EAST COAST OF CHINA—WHITE DOG ISLANDS TO NIMROD SOUND.

VARIATION 1° 00' to 1° 40' West, in 1861.

River Min.*—The entrance of this river (Min ho 閩河) is $8\frac{1}{2}$ miles N. W. & W. from the anchorage at the White Dogs, and is formed between sand-banks which extend 7 miles from the land, and partly dry at low water. The northern range of banks terminates to the eastward in a detached rocky patch, named Outer Min reef, two peaked heads of which show at the last quarter ebb. The large island of Woufou, 6 miles long east and west, and 4 miles broad, is situated within the entrance, and near its north-east point is the little island of Ho-keang, with its two contiguous islets called the Brothers.

Tides.—It is high water, full and change, at the White Dog islands, at 9h. 0m., and springs rise 18 feet; at Temple point, river Min, at 10h. 45m., and springs rise 19 feet, neaps 14 $\frac{1}{2}$ feet; and at Losing island, river Min, it is high water at noon.

Directions.—With a 16 feet rise of tide, the best time for entering the Min is from half-flood to half-ebb. The depth is 15 feet on the Outer bar, and 13 feet on the Inner bar, at low water springs. At low water neaps there are 19 feet and 17 feet respectively, and 27 and 25 feet at high water. At half-tide, both at springs and neaps, the depth is 21 feet over the Inner bar.

When the north sands of the entrance begin to dry, there are scarcely 16 feet on the bar. At low water springs they dry about 3 feet; at neaps they do not show. In fine weather, the North and South breakers appear from half-ebb to half-flood, and the Outer knoll, which has only 7 feet on it, seldom until after the last quarter; but in bad weather a line of breakers extends from the Outer knoll across to the north bank, and a continuous line from the South breakers to Black head.

The first of the flood-tide sets in from the N.E., and, running with great velocity through numerous small channels, and over the north banks inside of Rees rock, sets across the entrance of the river, passing Sharp peak direct for Round island, gradually changing its direction for Ho-keang 壠江 island as the tide rises. The first of the ebb comes from the direction of Round island, and sets across the Sharp peak entrance over the north banks; as the tide falls, the stream takes the regular channel.

Outside of Rees rock (called Lee-chung by the pilots), the ebb runs strong to the eastward until nearly low water, when it changes its direction to S.E.

* The description of this river is by John Richards, Master, R.N., Commanding H.M. Surveying vessel *Sardoon*, who re-surveyed it in June, 1854. See Chart of River Min, with Views, No. 2,460; scale, m = 1.3 inches.

The flood, now coming from the N.E., turns the stream off to the southward; and near the Outer knoll it runs strong to the S.S.W. for 3 hours, changing its direction to the westward as the tide rises. After half-flood, the stream sets towards Round island, and abates considerably in strength.

At Temple point, on the south side of Woga island, the ebb runs down for nearly 2 hours after it is low water by the shore, and the flood-stream runs for about $1\frac{1}{2}$ hour after high water.

Outer Bar.—A vessel bound for the river Min, from the anchorage under the White Dogs, should steer about N.W. $\frac{1}{2}$ W. $8\frac{1}{2}$ miles for the entrance of the channel, south of the Outer knoll. This is the track in, for the channel north of the Outer knoll is not safe, and should not be attempted by vessels of large draught. If the weather be cloudy, keep the Breakwater rock, off the west end of Tong-sha island, nearly in line with the south point of the Middle Dog, about S.E. by E. High Sharp peak, 1,232 feet high, open southward of Sharp Island peak, 616 feet high, N.W. $\frac{1}{2}$ W., is a good mark to lead in between the Outer knoll and the South bank,* till Triangle head comes open of the small black rocks off Sand Peak point, W. by S. $\frac{1}{2}$ S., or when the North breakers bear North, then haul up N.W. or N.N.W. (according as ebb or flood is running), and crossing the Outer bar, gain the deep channel to the northward.

Nine Feet Patch.—If intending to pass northward of the Nine Feet patch, Sharp Shoulder should be well open to the northward of Sharp Island peak, known as Pa-chau-me 琶州尾 by the natives, before Sand peak, 742 feet high, comes in line with the middle of the black rocks off Sand Peak point, S.W. $\frac{1}{2}$ S. If passing southward, Sharp Shoulder should be kept a little open to the southward before crossing that line of bearing.

Inner Bar.—When Sand peak appears well open westward of the black rocks off Sand Peak point, Sharp Shoulder may be brought in line with Sharp Island peak, gradually opening the Shoulder to the southward as Serrated peak, 2,028 feet high, comes in one with the south-east extreme of Woufou, S.W. by W. $\frac{1}{2}$ W., which now becomes the leading mark, until the middle of Brother A. islet comes on with the north high extreme of Brother B. bearing N.W. by W. $\frac{1}{2}$ W.; with which mark on, cross the Inner bar, steering a mid-channel course for the river when Round island comes on with the south-east extreme of Woufou, bearing S.W. by S., and taking care to avoid a sunken rock, with only 5 feet on it, lying three-quarters of a cable's length off Woga point. There is good anchorage in $5\frac{1}{2}$ fathoms, stiff mud, outside the Inner bar, with Brother B. in line with, or a little open of, Sharp Peak point, and Rees rock in line with Black Head.

Vessels of small draught turning in over the Inner bar, will find the following marks useful: Stand no nearer the north bank than with Temple point in line with Sharp Peak point, nor nearer the south-east side of Ho-keang bank than with Sharp Island peak on with the middle of Sharp Point bluff; nor to the north-east side of Ho-keang bank than to bring the right high extreme of Brother A. in line with the left high extreme of Brother B.

* See views A. and B. on chart.

Six Feet Rock.—To pass to the southward of this rock, which lies in mid-channel off Temple point, or Hek-tau 福斗, keep Sharp Island peak open of Woga point. The mud extends westerly a mile from Brother A., and on its northern edge is a patch of rocks, which covers at quarter flood, and from them Brother A. bears E. by S. $\frac{1}{2}$ E., and Temple point N. by E. Sharp Island peak shut in behind the high land of Woga, will lead inside, or northward of the Temple Point rock. In the North-east monsoon, the high land of Woga in line with or a little open of Temple point is a good line to anchor on; in the South-west monsoon Woga creek is the best anchorage.

Kinpai Pass is dangerous to strangers, particularly at or near spring tides, for then the violence of the current produces eddies among the rocks, that occasionally cross the channel, and render the vessel totally unmanageable, even in a fresh breeze; it therefore should never be taken without a pilot or personal knowledge, and then at slack tide. On the flood, a dangerous eddy extends from Kinpai point above it, in the direction of the Ferry; and for this reason, the passage north of the Middle Ground is considered the best. The Wolverine rock, with 13 feet over it, lies S.W. by W. $\frac{1}{2}$ W. from the north extreme of Kinpai point, and $1\frac{1}{2}$ cable from the shore. The Vixen spit, at the eastern end of the Middle Ground, lies S.W. 3 cables from the point, and the distance is about a cable from $1\frac{1}{2}$ fathom on its south edge to the southern shore.

After passing White Fort, close with the northern shore, for it is steep-to, and may be approached with safety. The highest part of Pass island in line with White Fort bluff outer extreme is a near clearing mark for the northern shoulder of the Middle Ground. It is recommended to shut Pass island in altogether until past that point, opening it again immediately afterwards.

The danger of this passage is in passing the northern shoulder, which forms a sharp angle of the bank, with only one foot on it at low water springs, and 4 fathoms close-to; from this point to the opposite shore the distance is only $1\frac{1}{2}$ cable. After clearing this point, in passing either up or down, the tide will tend rather to set the vessel from the bank into the stream.

The high serrated peak in line with the Ferry-house, S. $\frac{1}{2}$ W., leads through between the Middle Ground and the Quantao shoal, and is a good line for vessels to anchor on when coming down the river, and waiting for an opportunity of dropping through the Pass.

Tongue Shoal.—Passing the Ferry-house on the port hand the Tongue shoal is reached, steep-to, having 7 feet water near its northern extreme. This part is cleared by keeping the Ferry house midway between Kinpai bluff and the tower, until the highest point of Kowlui head comes in line with Half-tide rock, seen ahead. Between Half-tide rock and Tintao, also ahead, the bottom is very irregular.

Mingan 閩安 Pass.—Proceeding upwards, the river narrows at the Mingan Pass. About three-quarters of a mile above Mingan, and on the same side of the river, is Couding island, off the east point of which H.M.S. *Scout* grounded on a rock at the end of a ledge projecting 25 yards from the islet, with 7 feet near its extreme.

At the upper or south end of the gorge are two islets, Spiteful and Flat

islands, on the east bank of the river, and which must be left on the port hand. The Spiteful rock shows at low water; it is part of a rocky ledge projecting about 30 yards from the island.

To pass between the Spiteful rock and Lo-sing spit, and avoid the latter, do not shut in Younoi head with Flat island, until Black Cliff head, just passed (marked with a white spot), comes in line with the northern edge of Spiteful island.

The Pagoda rock, off the south point of Lo-sing 羅星塔 island, dries at low water springs. The best anchorage is between this rock and about half a mile above it; should this anchorage be full, a vessel should anchor near the south shoulder of Lo-sing island, where she will be out of the strength of the tide. The river is navigable for vessels three-quarters of a mile above the pagoda on Lo-sing island; but the channel is narrow, the tides strong, and the latter anchorage is generally preferred.

Leaving the River Min.—In dropping through the Mingan Pass with the ebb tide, it will be necessary to guard against a dangerous eddy setting from the point above Couding island on to the Scout rock.

On leaving the river, take care that the set of the tide across the channel between Sharp Peak point and Rees rock does not force the vessel on the shoals on the north side of the channel. Fair anchorage in 6 fathoms, to stop a tide, will be found with Rees rock bearing S.S.E.

The junks generally use the Woga channel between Woga and Sharp Peak islands, but to the northward of the latter island there are several sandbanks, which show at low tide, and there are not more than 6 feet water between the banks.

Matsou Island (Ma-tou-shan 馬祖山) lies to the north-east of the entrance of the river Min, and North 10 miles from the western White Dog; and between the two, and N. by E. $\frac{1}{2}$ E. $6\frac{1}{2}$ miles from the latter, is a precipitous black rock, 60 feet high, surrounded by reefs, named the Sea Dog.

S.W. by S. one mile from the Sea Dog is a rock called Hebe reef, which shows when there is a heavy swell and at low water springs; from it the west end of Matsou bears N.N.W. $\frac{1}{2}$ W., and the Breakwater rock at Tong-sha island S. by W. $\frac{1}{2}$ W.; the east end of Reef island (off the east point of Matsou) in line with Changchi peak N. by E. $\frac{1}{2}$ E. will lead to the westward.

Between the Sea Dog and Matsou are two other rocks above water, named the Sea Cat and the Flat rock, but they should not be approached within the distance of 2 cables.*

Caution.—A dangerous rock, on which the sea breaks at low water, has lately been discovered by the river Min pilots, lying East 3 miles from the Sea Cat, and N.N.E. from the highest part of the Middle Dog. Until this danger has been farther examined, the mariner should use great caution in approaching its locality, for its position is given by compass bearings, and therefore must be considered doubtful.

Anchorage.—A good roadstead will be found on the western side of Matsou island during the North-east monsoon, and good shelter in the deep bay on its

* See Chart, East Coast of China, Sheet 6, No. 1,754; scale, $d = 1\frac{1}{4}$ inches.

northern face in the South-west monsoon. H.M.S. *Hornet* was well sheltered in 5 fathoms, muddy bottom, at a third of a mile from the shore, with the west extreme of bay bearing N.W.½W., east extreme E.N.E., centre peak of bay S.W., and Pastel rock N. by E.½E. There are several villages around the bay, and fish, goats, and a small quantity of poultry may be procured; fresh water can be obtained in both bays.

Changchi 長支山 Island.—At 1½ mile to the north-east of Matsou is Changchi island, having two remarkable sharp peaks on it, the highest of which is 1,080 feet above the sea. On the northern face of the island are several islets, the largest of which, Gordon islet, bears North 2½ miles, but there is no safe passage between them. N.E. 1½ mile from Gordon is a small black rock, with a reef lying westward of it.

At half a mile S.S.E.½E. from the islet off the south point of Chang-chi are two rocks always above water; and West 1½ mile from the south point is the Pastel rock.

N.E. by E.½E. 2 miles from the north-east point of Changchi, and with a channel between them, are three peaked rocks, named the Trio, 50 feet above the sea.

Anchorage.—The bay on the south side of Changchi affords good shelter in the North-east monsoon. Vessels entering from the northward can round its eastern point close-to, and anchor within the point, in 6 fathoms. Either this or the anchorage on the western side of Matsou should be used by sailing vessels bound to the River Min during the North-east monsoon, as they may always get to the bar from hence to the precise moment they require it, but from the White Dogs a vessel will barely fetch.

Alligator, Island or Tungsha 東沙, is a barren rock, about 40 feet above the sea, in lat. 26° 9' N., long. 120° 26' E. It lies East 2¼ miles from Matsou island, and N.E. by E.½E. 26 miles from the south end of the White Dogs.

Larne Rock and Islet.—N.W. by W. 12½ miles from Alligator island is Larne rock, which is low and flat, with a reef lying 2 cables north of it. Larne islet, bearing N. by E. 5½ miles from Larne rock, has ledges extending from its north and south ends. It is about 200 feet above the sea, with large boulders sticking up here and there; near its summit are three houses.

Black Rock, 40 feet high, is 7½ miles to the W.N.W. of Larne islet, and the channel between it and Ragged point is 6 miles wide. A reef, which shows at low water, lies E.N.E. 5½ miles from the Black rock, and midway between Larne and Cony islets, with Larne bearing S. by E.½E. 5 miles, the north end of Tung-ying island E.½S., and Cony islet N.W.½N.

Tung-Ying 東永, the easternmost island on this part of the coast, bears E.½N. 13 miles from Larne islet, and its peak rises 855 feet above the sea. The appearance of this island is level and flat, with steep cliff shores, and a large village stands on the western side; off its south extreme is a ledge of rock. There is another island half a mile to the north-westward of Tung-ying, appearing as part of it, except on a N.E. by N. or S.W. by S. bearing.

Anchorage.—There is a good anchorage in the North-east monsoon, in 10

fathoms, at half a mile to the southward of the small island lying off the north-west point of Tung-ying.

Cony Island is a remarkable conical island, lying W.N.W. 19 miles from Tung-ying; a reef extends 3 cables off its north-east shore, otherwise the channel, which is nearly $1\frac{1}{2}$ miles wide, between it and the two islands north of it, is safe. There is a rock, awash at low water, lying East $1\frac{1}{6}$ mile from the cape, and another S.E. $\frac{1}{2}$ E. $1\frac{1}{6}$ mile; from the latter the south end of Spider island bears W. $\frac{1}{2}$ N.*

Spider Island lies 3 miles to the westward of Cony island, and its highest part is 620 feet above the sea. There is a large village in a bay on its south side, a reef off its south-west point, and four islets off its north-east face. Between Spider island and the main, which is $5\frac{1}{2}$ miles distant, there are three other islets; between the first and Spider island is a half-tide rock; the centre one, named Isthmus, has a sandy isthmus and a mud bank extending westerly from it, but the channel between it and the first islet is clear. The passage between Isthmus and Inside islet to the westward of it, is obstructed by half tide rocks. The channel between the latter islet and Cox point has 6 to 4 fathoms water, and is a mile wide. To the southward of Isthmus islet are the Larva rocks, four of which are above water; reefs, however, extend northerly from them, rendering the passage between them and Isthmus islet barely a mile wide.

Anchorage.—There is good shelter from N.E. winds on the west side of Spider island.

Ting-hae 定海 Bay, formed on the west side of a peninsula on the mainland 13 miles westward of Changchi, affords safe anchorage in $2\frac{1}{2}$ to 3 fathoms in the N.E. monsoon.

Fronting this bay to the southward and south-east are many islets and rocks. The outermost (four islets above water, named Square rocks) lie 3 miles to the southward, with reefs extending northerly from them. To the north-east of the Square rocks is Crab islet, surrounded by reefs, which extend off its north-west part at least half a mile. In the channel between Crab islet and Ting-hae point are two islets.

Wanki Bay, 6 miles to the E.N.E. of Ting-hae, is frequented by junks; but although it affords them good shelter, it cannot be recommended for larger vessels. There is a rock, which shows at low water, lying near the centre of the bay at 7 cables from the shore, with Pe-kyau point bearing E. $\frac{1}{2}$ N., and the nearest Claret rock S.E. by S.

Claret Rocks lie $1\frac{1}{2}$ mile to the southward of the east point of Wanki bay. Three of them are from 20 to 30 feet above the sea, but they are all surrounded by sunken rocks, the southernmost of which lies S.W. $\frac{1}{2}$ S., half a mile from the south Claret, with the hill over Ting-hae bay bearing W. $\frac{1}{2}$ N., and the summit of Matson S. by E. The northernmost rock lies N.E. $\frac{1}{2}$ E. a mile from the north Claret, with the north end of Gordon islet in one with a small islet beyond it, bearing E. by S. $\frac{1}{2}$ S. Pe-kyau point is half a mile to the northward of this rock; there is a channel between them, but the sunken rocks lying off

* See Plan of Sam-sah Bay.

the point narrow it to 2 cables; a stranger therefore should pass south of the Claret rocks, and haul up when the village in Wanki bay bears North.

Ragged Point is the extreme of a narrow peninsula, in some places only half a mile across, which runs $5\frac{1}{2}$ miles to the E.N.E. of Wanki bay. Off the east end of the point, distant a quarter of a mile, is Diplo islet, with a reef three-quarters of a cable's length to the eastward of it. The junks use the passage between Diplo and the main, but vessels have no business in it, as the tides are strong.

Sam-sah Inlet.*—The entrance to this inlet, at 10 miles to the westward of Spider island, is $1\frac{1}{2}$ mile wide, with deep water and strong tides. On the eastern side, close to the entrance, is a small bay with a fort in it, and here the junks remain for a tide, but the water shoals too suddenly for vessels that cannot take the ground. A rock lies in mid-channel, with Castle point bearing E. $\frac{1}{2}$ N., centre peak of Cone island N. $\frac{1}{4}$ W., and Steep rock N. by E. $\frac{1}{2}$ E.; the west end of Cone island in line with the highest peak of Crag island will lead eastward of it.†

The *Plover* made a running survey of the interior of this inlet. In proceeding to the westward, she left a large island on the port hand, then hauled to the northward, and found anchorage on a middle ground, three-quarters of a mile from the shore, and $5\frac{1}{2}$ miles above the island. The bay extended to the northward 13 miles beyond this anchorage, terminating in a sandy isthmus, over which Fuh-ning bay was seen. The bay also runs back to the west and south-west; in the latter arm is the town of Ning-teh-hien 寧德縣.

At 4 miles to the southward of the entrance of Sam-sah inlet is the opening into another inlet, which is 10 miles deep; there are 30 fathoms water at the entrance, but circumstances did not admit of its being examined.

Rag Island.—Off the entrance to Sam-sah inlet, and 7 miles to the south-westward of Spider island, there are three islets, named Rag islands, having the Bittern rock, which covers at high water, lying a mile to the northward of them. The *Plover* anchored to the westward of the westernmost islet, and found tolerable shelter. The tides here run with great strength, and a long swell rolls home into the bay with north-east winds.

Tides.—It is high water, full and change, at Changchi island at 9h. 30m., and at Spider island at 10h. 0m.; springs rise 17 feet. Inside Matsou and Changchi islands the tidal streams are very perceptible, there being a great indraught into Ting-hae bay and the northern entrances to the river Min with the flood, and the velocity off Ragged point sometimes amounts to 3 knots. There is also a great indraught into Sam-sah inlet.

To the northward of Changchi the flood came from the E.N.E. at the rate of $1\frac{1}{2}$ knot per hour, and the ebb from W. by S. $1\frac{1}{2}$ knot; also off Cony island the ebb averaged $1\frac{1}{2}$ knot from W. by S. at neaps. At the anchorage inside Sam-sah inlet the ebb came from the N.W., and it ran $11\frac{1}{4}$ miles in a tide; the flood set E.N.E. for the first 3 hours, then S.E.

* Sam-sah inlet is not known by that name to the natives or European coasters. The true Sam-sah lies farther north, between Fuh-ning and Nam-quan.—Commander G. T. Colville, H.M.S. *Comilla*, December 1866.

† See Plan of Sam-sah bay, No. 1,906; scale, m = 0.7 of an inch.

Double Peak Island is $3\frac{1}{2}$ miles long, N.N.E. and S.S.W., and near its northern end are two remarkable peaks, the highest of which rises to the height of 1,190 feet above the sea. It lies 3 miles to the north-east of Spider island, the only danger in the channel between being the rocks lying off the north end of the latter island.

There are two cone-shaped islets between Double Peak and Cony island, with channels between too narrow for sailing vessels, but there is a good passage between the southernmost of these islets and Cony island: reefs extend 3 cables in a north-easterly direction from the latter, and the west point of the former is not steep-to.*

Anchorage.—Good anchorage in the North-east monsoon will be found to the south-east of a small islet, with a rock above water on each side of it, lying three-quarters of a mile to the westward of the west point of Double Peak island; the two cone-shaped islets to the northward of Cone island sheltering from the eastern swell.

Flap Island, at $1\frac{1}{2}$ mile westward of the north end of Double Peak, is a low flat islet, with a sunken rock off its southern point. There is no passage fit for vessels between this islet and the mainland, but there is good shelter abreast the first sandy bay within the point westward of it.

Bittern Island.—To the northward of Flap and Double Peak islands the coast trends to the northward for $9\frac{1}{2}$ miles to Fielon island, and off it is Bittern island and several rugged rocks, which it will be advisable for vessels of large draught to give a berth to, and not to close the shore under the depth of 6 fathoms. Bittern island is from 3 to 4 miles in circumference, and between it and the main there is a passage three-quarters of a mile wide and a mile in length, affording good anchorage in $3\frac{1}{2}$ fathoms for small vessels in either monsoon. On the north-west side of the island is a sandy cove, where fresh water will be found. H.M.S. *Bittern* anchored in $4\frac{1}{2}$ fathoms, with Goodridge point E. $\frac{1}{2}$ N., and the extremes of the island from S. by E. $\frac{1}{2}$ E. to S.W. by S.

Fuh-ning 福寧 Bay.—From Fielon island the coast falls back to the westward, forming a deep but shallow bay, in which is the city of Fuh-ning. In the northern part of the entrance is a group of islets, extending 2 miles from the coast. The *Plover* anchored under the south-western, named Fong-ho, which is the largest, but the shelter was not good.

Pih-seang Islands.—N.E. by E. 10 miles from Double Peak island is the Pih-seang 北礮 or Tsih-sing 七星 group. The northern islet, named Town island, is the largest, and at its south-west angle there is a little cove, which will afford shelter to one or two small vessels. Between the northern and southern islets of the group there is a channel free from rocks, but the intervening space is studded with fishing-stakes.

Fuh-yau 福瑤山 Island, 1,700 feet above the sea, lies North 12 miles from the Pih-seang group, and between it and the coast is a good roadstead, named Lishan bay. The anchorage in the bay is on the Fuh-yau side, abreast an islet and a temple. The northern entrance to the bay is broad and

* See Chart, China, East Coast, Sheet 6, No. 1,754; scale, $d = 14\frac{1}{2}$ inches.

SAILING DIRECTIONS FOR THE COAST OF CHINA.

open. To the southward are three entrances; the first, Fuh-yau pass, between Fuh-yau and Ohuhpi island, is only a cable wide, and vessels using it are apt to get becalmed under Fuh-yau. The Ohuhpi pass between Ohuhpi and Angle island is 8 cables across, but there is a patch of low rocks (which must be left to the westward) to the S.W. of Ohuhpi that narrows the channel to half a mile; and there is a sunken rock off the north-east point of Angle island. The third entrance, between Angle island and the main, called Little Pass, is only fit for small junks or boats.

Tides.—In Lishan bay it is high water, full and change, at 10h. 15m., and the rise at springs is 16 feet. The first of the flood comes from the E.S.E. at the rate of three-quarters of a knot per hour, then from E.N.E. at half a knot; the ebb runs to the N.E. at three-quarters of a knot.

Dangerous Rock is in lat. $26^{\circ} 53' N.$, long $120^{\circ} 34' 18'' E.$, and its summit is 8 feet above high water, or 24 feet above low water springs.

Tae or Tai-shan 臺山 Islands.—E. by N. 16 miles from the eastern point of Fuh-yau are the Tae islands, the easternmost of which, rising to the height of 618 feet above the sea, is the largest, and remarkable for its table top. Shelter can be had under this island as close as a vessel can safely go (say half a cable's length), but it is bad.

S.S.W. $\frac{1}{2}$ W. 3 miles from the easternmost Tae island are two rocky islets, named Strawstack, about 100 feet high; they almost join. Close to the north-east point of the northern Tae island is a remarkable Mushroom rock, 260 feet high.

Between the Tae group and Fuh-yau are the Incog islands, too small to afford shelter; they are low and flat, with steep cliffs. At 3 miles to the N.W. of these islands is Solitary rock, with a reef extending 2 cables in an easterly direction from it; the soundings between this rock and the main, from which it is distant $3\frac{1}{2}$ miles, vary from 7 to $5\frac{1}{2}$ fathoms.

Caution.—Vessels passing inside the Tae group should keep well to the westward, as the ground in their vicinity has not been well explored. Two reefs, which show at low water, have been found; one, with the rocks on it 8 feet above high water, lies with the Mushroom rock bearing E.S.E., and the west end of the eastern Incog island S.W. by W. $\frac{1}{2}$ W., on which bearing it is in line with the east end of Fuh-yau. The table-top island of the Tae group bears from the other E. by S. $\frac{1}{2}$ S. and the west rock of the group N.E. by E. $1\frac{1}{2}$ mile.

Seven Stars are three small rocky islets with several rocks awash near them, lying N.E. by E. $\frac{1}{2}$ E. $6\frac{1}{2}$ miles from the eastern Tae island. At 3 miles to the N.N.W. of these is Cleft rock, 50 feet above water.

Pih-quan 北關 Harbour.—N.W. 14 miles from the Tae group is the entrance to Pih-quan harbour, to the northward of which is a remarkable high peak, Pih-quan peak, in lat. $27^{\circ} 18' 48'' N.$, long. $120^{\circ} 28' 45'' E.$ The harbour is formed between Ping-fong and Chin-quan islands, is $1\frac{1}{2}$ mile wide, carries a depth of 3 fathoms, and affords good shelter in the North-east monsoon to vessels under 15 feet draught.

Ping-fong has three chimneys on its summit; off its south-east point is a

low rock which is never covered, and between this rock and Ping-fong is a sunken rock. Vessels bound to this harbour from the northward may round this low rock within a cable's length, and then haul up for the south point of Ping-fong, giving it and also the south-west point a berth of 3 cables. The Pih pass, between the north end of Ping-fong and the main, is fit only for such junks as use sculls.

Water.—Fresh water may be obtained in the sandy bay at the foot of the three chimneys on Pih-quan.

Nam-quan 南關 Harbour.—The south point of Chin-quan island is a bold steep bluff, having under it a rock which may be passed close-to. Anchorage in 9 and 7 fathoms will be found on the west side of Chin-quan, after a second rock has been passed. The soundings shoal suddenly to the northward in the north part of Nam-quan bay, where stands the walled town of Nam-quan.

Immediately to the westward of Nam-quan bay is the entrance to an inlet called Nam-quan harbour, which runs about 15 miles in a general N.W. direction, when it appears to expand into a wide basin called Gordon bay.*

On the point at the north side and a little within the entrance is a town. South of the town point is a small rock which never covers, having rounded which, haul up to the northward, giving the western end of the town point a berth of $1\frac{1}{2}$ cable, to avoid a sunken rock off it, which shows till quarter flood. When within the point, anchor in 14 fathoms, as the mud banks rise almost vertically. On the south side of the entrance is a small fort with a few houses. The narrowest part of this channel is 6 cables wide, and the strong tides and baffling winds make it necessary to have a boat ready to tow the vessel's head round. The *Plover* traced the inlet for 15 miles to the N.W. from the town point, and had then a depth of 8 fathoms; the channel, which is, however, narrow and tortuous, is surrounded by high hills, and there was apparently little or no traffic.

Mired Rock.—H.M.S. *Nimrod*, when proceeding up Nam-quan harbour, January 1857, struck on a rock with only 9 feet water on it, lying about 11 miles from the entrance, and $1\frac{1}{2}$ cable eastward of a small islet on the western shore.†

Tides.—In Nam-quan harbour it is high water, full and change, at 10h. 0m.; springs rise 17 feet.

The Coast from Pih-quan harbour trends N.E. by N. 19 miles to Pingyang point; at 12 miles from the harbour is Tanue bay, which is too shallow to afford shelter to any vessel drawing over 10 feet water. A low rock, named Gap islet, lies $1\frac{1}{2}$ mile to the southward of Tanue point; and N.E. $\frac{1}{2}$ E. $4\frac{1}{2}$ miles from it is Farmer rock, which shows at low water, and lies $3\frac{1}{2}$ miles off shore, with Pingyang point bearing N.N.W., and Nam-ki peak E. by N.

From Pingyang point the coast takes a north-westerly direction, and is fronted by mud-banks, which dry 3 miles from the land at low water, and on which are several small islets and rocks. At the distance of 11 miles from the point is the embouchure of the Shwui-gan river, by which the commerce of Wan-chau is maintained; there are only 9 feet on the bar at low water.

* See Plan of Nam-quan Harbour, No. 1,280; scale, m = 1.7 inch.

† Captain C. C. Foryth, R.N., H.M.S. *Porpoise*, 1857.

Off the entrance of the Shwui-gan are the Tsang islets, four in number, the southern of which is the largest. In the channel, between this latter islet and the mud bank at the entrance of the river, the depth is only 9 feet. Between the south islet and the one next it to the northward, there is a channel close to the latter with 4 fathoms in it; and inside the two central islands the depth is 3 fathoms, but the space is confined.

Namki 南圮山 Islands lie N.E. by N. 29 miles from the Tae group, and the largest, 740 feet above the sea, has a good harbour during the North-east monsoon on its south-eastern side, called Port Namki. Vessels should not pass among the islets forming the south-west part of this group, as there are many reefs which cover at high water. The westernmost islet, Turret island, makes like a cone, and has reefs to the northward of it. The southern islet is a castellated rock, and lies S.S.W. 5 miles from the rest of the group.

Pih-ki-shan 北岐山 Islands.—N.N.E. 9 miles from Namki is another group, the largest of which is called Pih-ki-shan. There are four small islets lying close to its south-east side, which protect the anchorage on the south side of the island from the easterly swell. Vessels should not, however, choose this anchorage, unless from necessity. Fresh water may be obtained.

Tung-pwan and Tae-pih Islands.—West 11 miles from Pih-ki-shan, with five small islets intervening, is another group of one large and four smaller islets. The large islet, called Tung-pwan 銅盤 i.e., Brass basin, has anchorage off its south-west face in 8 fathoms in the North-east monsoon; but the shelter is not so good as that on the south side of the Tae-pih islands, lying 3 miles to the N.W., under which the water will be smooth in 4 fathoms.*

In working up to the northward of the Tae-pih and Tung-pwan groups, shoal water will be found to extend 8 miles from the foot of the hills on the main; at which distance is the 2 fathoms' line of soundings. On the eastern edge of this line, at $6\frac{1}{2}$ miles northward of Tae-pih, is the Pang-peto reef, which is visible at low water; from it the western of the Tae-pih islands bears S.S.W. $\frac{1}{2}$ W., and the southern of the Tseigh islands E. by S. $\frac{1}{4}$ S.

Tides.—At the Namki and the Pih-ki-shan islands it is high water, full and change, 8h. 30., and the rise at springs is 17 feet. At the anchorage under the southern side of the latter group, the ebb runs to the N.N.W., and the flood to the S.E. by E.

Fong-whang Group.—The Tseigh islands, three in number, and named North Tseigh 北策, South Tseigh 南策, and East Tseigh 東策, lie N.N.W. 8 miles from Pih-ki-shan, and form the south extreme of a large and numerous group. Between the Tseigh and Pwan-peen island 半邊山 the next island to the northward, is a navigable channel for vessels 3 cables wide. Fong-whang, the largest island of the group, is 6 miles long N.E. and S.W., $2\frac{1}{2}$ miles at its extreme breadth, and its eastern face is high and precipitous; there is a channel for junks between it and Pwan-peen.

Coin island, the north-eastern of the Fong-whang group, has three rocks lying to the N.W. of it, and to the W.S.W. is a low flat islet, Flask island, with

* See Chart; East Coast of China, Sheet 7, No. 1,759; scale, $d=14\frac{1}{2}$ inches.

rocks off its southern end, and two rocky islets to the westward, between which there is a safe channel, carrying a depth of 8 fathoms.

Bullock Harbour, the entrance to which is between the Tseigh group and a high island with bold cliffs, named Takew 大瞿, has excellent anchorage in 4 to 10 fathoms, sheltered from all winds. The distance is 2 miles between the Tseigh and Takew; and on entering, a vessel will have to pass over a bar with 4 fathoms on it, deepening to 6 and 8 fathoms, and then shallowing to 4 and 3 fathoms at the head of the harbour. The anchorage is in $5\frac{1}{2}$ fathoms off the west end of Pwan-peen island.

Supplies.—Water can be procured in this harbour, and bullocks of the best description.

Tides.—It is high water, full and change, in Bullock harbour, at 8h. 30m., and the rise at springs is 17 feet.

Directions.—Vessels approaching Bullock harbour from the southward cannot pass between the Pih-ki-shan and the Tseigh islands, as there are clusters of rocks interspersed with reefs between them, but they should pass between Tung-pwan and Shroud islet, which may be recognized by its bluff; the islands near it are low. Care must be taken to avoid a sunken rock lying North of the rocks immediately westward of Shroud; and also the reef North of the islet lying N.N.W. $2\frac{1}{2}$ miles from Shroud.

In approaching the harbour from the northward, through the San-pwan pass, which may be taken by a vessel of 12 feet draught, pass to the westward of Takew, bearing in mind that a rock with only a foot over it at low water lies N.N.W. $\frac{1}{4}$ W., rather more than a mile from its south-west point, with the west point of Fong-whang in line with the east extreme of Great San-pwan bearing N.E. $\frac{1}{2}$ N.

To the N.W., 4 miles from Takew, is the island of Miaou, or Mi-yau-shan 尾岬山; the channel lies between these two, and between Miaou and Fong-whang, where, from both shores being shoal, it is only 6 cables across. Great San-pwan is almost connected with Miaou, there being but a very narrow channel between them. Close to the south-east point of Great San-pwan is a bold perpendicular islet, and the channel is between this islet and Little San-pwan. The winds being variable and the tides uncertain, unhandy vessels will have difficulty in clearing this pass, especially if a strong northerly wind has been blowing, as there is usually a heavy swell at such times setting into it.

Wan-chau 温州 River.—N.W. by W. 8 miles from Miaou island is Wan-chau island, fronting the mouth of the river. A mud spit extends 6 miles to the south-eastward of this island, leaving only a shallow channel of 7 feet water between it and Miaou.

Tides.—At the entrance of Wan-chau river it is high water, full and change, at 9h., and 9h. 30m. at Wan-chau-fu; and the rise at each place is from 15 to 16 feet.

Directions.—When bound to Wan-chau river from the southward, after passing Coin island, steer N.W. $\frac{1}{4}$ N., leaving the Cliff rocks to the north-east, and the north rock of Great San-pwan island to the southward. Having passed the latter, edge away W. by N. for the south point of Hutau island

虎頭山, leaving a remarkably steep bluff island, called Hokeen, to the southward. Off the south point of Hutau, and abreast of Hokeen, is a sunken rock lying $1\frac{1}{2}$ cable* from the shore, but it will be avoided by opening the south-west point of Hutau to the southward of a white rock in Hutau bay. South of the white rock there is a middle ground, confining the channel to a width of 7 cables. There is good anchorage in 4 and 5 fathoms to the S.W. of the white rock, but the bay within it is shoal.

From the south-west point of Hutau the entrance of the river bears W.N.W. 5 miles, and it will be known by an isolated range of hills, with a square fort at the east, and a small walled town at the west end. The depth varies from 3 to 4 fathoms in the channel, which is more than a mile wide, but the mud dries upon either side, and it shoals suddenly. Having passed the range of hills, keep the left bank or north shore of the river aboard, until the first hill on the flat island (Wan-chau island) on the south side of the river, bears S.W. by S., when the vessel will have cleared a middle ground at half a mile from the south shore, and $1\frac{1}{2}$ mile to the E.N.E. of this hill; the highest part of Hutau in line with the south foot of the hills at the entrance bearing E. $\frac{1}{2}$ S. is the mark for its northern edge.

From abreast this middle ground edge over to mid-channel, passing a large walled town on the north side of the river, then gradually haul over to the first point on the south side, where the hills come down to the water's edge, passing a point with a circular fort, and a building like a large jar upon it close-to. Vessels ought not to go above $2\frac{1}{2}$ miles beyond Jar point; they will then be in from $8\frac{1}{2}$ to 7 fathoms water. From this anchorage the distance to Wan-chau-fu is $5\frac{1}{2}$ miles, but the channel is too intricate for a stranger. The water of the river contains a great deal of sediment, and is not used by the inhabitants for culinary purposes.

Lo-tsin Bay.—Junk island is low and rocky, and lies on the north side of Hutau island. The channel between them, and between Junk island and the main, can only be used by small junks.

To the northward of Junk island is Lo-tsin bay, which runs back to the northward 20 miles. There is good anchorage in its southern part, but its head is shoal, except a narrow channel, named Hebe Lock, which makes Ta-ou an island.

Quang-ta Island.—At 2 miles eastward of Hutau is Quang-ta island, under the west side of which H.M.S. *Plover* anchored, but the water was found to shoal very suddenly. There is a channel between Quan-ta and the Cliff rocks to the south-east, and also between Quang-ta and Ta-ou to the northward; take care, however, to avoid the islets and rocks off the north-east part of Quang-ta.

Kemong Harbour.—Near the east point of Ta-ou island is a bight named Kemong harbour, with an islet off each point, in which the junks are fond of taking shelter. It is, however, confined, and vessels will find better anchorage to the eastward under either Taluk or Seoluk islands.

* Commander Vansittart, H.M.S. *Bittern*, states that this rock is within half a cable's length of the point, and may be passed close to; and that a sailing vessel must be careful of the ebb tide, which sets with great strength to the E.N.E., across the flat between Hutau and Wan-chau point, and between Hutau and Junk island, especially as the flat seems to have grown to the southward.

Captain Meier, of the barque *Kingman*, reports * the existence of a rock, awash, lying in the middle of the entrance to Kemong harbour. From the rock,—which was only seen twice, one or two feet above water, during the three weeks the vessel remained in the harbour,—the east extreme of the rocks extending from the north-eastern point of Quang-ta bore South, and the east point of Nam-pan S.W. The Chinese knew of the existence of the rock.

Seoluk 小鹿, **Taluk** 大鹿, **Chin-ki** 鷄冠, **To-wan**, and **Pe-shan** 披山, Islands lie from 3 to 14 miles to the eastward of Ta-ou. The Seoluk consist of three islets, lying north and south of each other. Taluk is a higher island, 770 feet above the sea, lying $1\frac{1}{2}$ mile to the northward of the Seoluk, and in the channel between them the depth is 7 and 8 fathoms. West of Taluk is Chin-ki, a low flat island with a large village on it; there is anchorage between these in 3 to 4 fathoms. The bay to the north-west of Chin-ki is shoal; at its head is the entrance to Hebe Lock, communicating with Lo-tsin bay. At 8 cables to the north-east of Chin-ki is Town island, with a channel of 4 fathoms' water between them; but as a sunken rock lies in the middle of this channel, and a reef runs out from the north point of Chin-ki, vessels have no business here. Between Town island and the rocks off the north end of the Taluk island, the passage is a mile wide.

Pe-shan, the easternmost islet of this group, is $1\frac{1}{2}$ mile long, east and west, and off its northern face are three rocks, and off its southern two islets. W. by N. $1\frac{1}{2}$ mile from Pe-shan is a low level islet, named Flare island, and to the N.W. is Sugar Loaf island, with a small islet lying close to its north side. Between Sugar Loaf and Flare islands the depth is 5 fathoms.

Tides.—At the anchorage between Chin-ki and Taluk islands it is high water, full and change, at 9h. 20m.; and springs rise 13 feet.

Taow-pung Island 吊邦山, bearing N.N.E. 9 miles from Pe-shan is 7 miles long N.N.E. and S.S.W., and $1\frac{1}{2}$ mile broad, and to the westward of it is Yey-van bay, which is shoal and affords no shelter. The island is separated from the main by a narrow channel, called Penetration pass, through which all the country trade passes. Near the north end of the pass, on the main, is the walled town of Song-men.

Song-men point forms the south end of Taow-pung, and to the south-west of it, at 2 and 3 miles respectively, are two flat rocks above water. To the south-eastward of the point are several islets; the nearest, named San-shi 三石, has a reef to the westward; the outer isles of the three has a shoal off its north end. There is a navigable channel, a mile broad, between San-shi and the rocks off the point. At 3 miles to the N.E. of San-shi, are the Stragglers and Shetung 石塘 islets; the latter, the northern and highest islet of the group, has a reef lying 3 cables from its south-west point, and many rocky islets off its south end, between which and the Stragglers there is a channel carrying a depth of 6 fathoms. Indifferent shelter in the North-east monsoon may be found under Shetung island.

* Nautical Magazine, page 377, May, 1860.

Between Shetung and Taow-pung island are two islets, forming three channels, the eastern of which, between Shetung and the next islet westward, has $3\frac{1}{2}$ fathoms in it, but the other two are too narrow for vessels. Junks lie inside the inner islet, where there is a small village. To the north-east of these two islets are three rocks above water, the northern of which has a reef off its east end. Soudan, the eastern islet of this group, bears N.E. 15 miles from Peshan; it is flat-topped, and has a reef on its south side.

Chikhok Islands 積穀山.—Chikhok island lies North 6 miles from Soudan island, and as it rises abruptly to the height of 760 feet above the sea, and has a broad yellow stripe on its south-eastern side, it forms altogether one of the best leading marks on the coast. N.N.W. $1\frac{1}{2}$ mile from Chikhok is an islet named Low Chikhok, with a half tide rock lying N.W. 8 cables from it. West 2 miles from Chikhok is Crookback island, with many rocks about it. H.M.S. *Plover* anchored to the south-west of Crookback in $2\frac{1}{2}$ fathoms, but a long swell sets in here, and the channel to the northward of it is too shallow to get through on that side. The same may be said of all the channels amongst the islands to the north-west of Chikhok.

Tai-chau Islands.—East, distant $9\frac{1}{2}$ miles from Chikhok island, is Hea-chu islet 下竹山, the southernmost of the Tai-chau group; off its south side is a remarkable finger rock. The group extends 9 miles to the northward of Hea-chu, and consists of two large and ten smaller islands. Between the two large islands is an excellent harbour, the approaches to which, both from the eastward and westward, are free from danger. The southern large island, 750 feet high, is called Hea-ta, or Hia Ta-chin shan 下大陳山, and the northern Shang-ta, or Shang Ta-chin shan 上大陳山, which is well inhabited. Between Shang-ta and the Shang rock, to the N.N.E., there is a safe passage.

At about 2 miles to the south of the west point of Hea-ta are two rocks, the western of which shows at all times of tides, and lies S.S.W. $3\frac{1}{2}$ miles from the highest part of Hea-ta; the other, which bears N.E. $\frac{1}{2}$ N. 4 $\frac{1}{2}$ cables from the western rock, and S. by W. $\frac{1}{2}$ W. from the highest part of Hea-ta, covers at high water.

Anchorage.—The best anchorage in the harbour formed between the two larger islands of the Tai-chau group, during the North-east monsoon, is to the south-east of the islet lying off the south-west extreme of Shang-ta.

Tides.—It is high water, full and change, at the anchorage at the Tai-chau islands at 9h. 0m., and springs rise 14 feet.

Squall Islands.—At 6 miles N.W. by W. from Shang rock, the northern islet of the Tai-chu group, are the two Squall islands, but so close together as to appear as one, except on an E N.E. and W.S.W. bearing. Rocks lie off the north-east and north-west points of the northern island, and a reef extends from the south-east end of the southern island. Junks take shelter under the western point during strong north-east winds.

Crate island, a small cliff islet, lies $2\frac{1}{2}$ miles to the eastward of the Squall islands, and the channel between them has 8 fathoms in it; but the western end of Crate is not steep-to.

Tai-chau Bay and River.—Tai-chau bay, to the N.W. by W. of the Tai-chau islands, is wide and shallow, and at its head is the entrance to Tai-chau river. On the right bank of the river is the walled town of Haimun, 4 miles above which the river separates into two branches, one taking a north-west, the other a south-west, direction. The city of Tai-chau 台州市 is on the north branch of the river, about 24 miles in a direct line from Haimun. There are only 8 feet at low water across the bay to the entrance of the river, but inside the entrance points the depths are $4\frac{1}{2}$ and 5 fathoms. The inhabitants reported that vessels of 12 feet draught could not cross the bar, except at high water, and that the tide, which rises from 18 to 20 feet in this locality at springs, would carry them up to the city.

At 9 miles to the south-west of the Squall islands is the North Foreland, an islet lying off the southern side of Tai-chau bay, $1\frac{1}{2}$ mile from the coast, with a depth of 10 feet inside it. South of it are two other islets; and there is a half-tide rock, which bears West southerly 12 miles from the north point of Shang-ta, S.S.E. $2\frac{1}{4}$ miles from the North Foreland, and N.N.W. from Chik-hok island, on which bearing Low Chik-hok island is in one with it. In the channel between the Squall islands and Tai-chau bay, the water shoals gradually towards the main; but by not bringing the North Foreland to the eastward of South, a vessel will be in $2\frac{1}{2}$ fathoms at low water.

Chuh-seu 竹嶼 Island, lying N.N.W. $4\frac{1}{4}$ miles from the Squall islands, is remarkable, having a sharp cone, 670 feet above the sea, over its southern point, and a beacon on its western summit. Between Chuh-seu and the Squall islands are four rocks; and S.E. by E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from the former is a solitary rock, named Fir Cone.

Anchorage and Water.—Good anchorage in 6 fathoms and a convenient watering place, with abundance of water, will be found under and to the south-west of the cone of Chuh-seu, between the south-west shore of Chuh-seu and an islet with a reef off its north-east point.

The channel between Chuh-seu island and Mud islet (a hill on the mud on the north side of Tai-chau bay) is shallow, with several rocks in it covered at high water. North $1\frac{1}{2}$ mile from the western islet off the Chuh-seu group is a rock showing at low water.

Tungchuh Island or Tung-ki-seu 東機嶼.—East, a little northerly, 5 miles from Chuh-seu, is Tungchuh or Bella Vista island, 700 feet high, the easternmost of this group. The two Reef islands lie S.S.W. $2\frac{1}{4}$ miles from the south point of Tungchuh; a reef extends north-easterly from the southernmost of the two. Midway between Reef and Chuh-seu are a cluster of rocks.

The island of Gau-tau, remarkable for four barren peaks, lies 3 miles to the north-west of Tungchuh. The channel between them has not been examined; there is generally a heavy swell in it. The low north-eastern promontory of Gau-tau is an island at high water; a half tide rock lies North 3 cables from its eastern end.

Anchorage.—Shelter may be had in the North-east monsoon under the south side of Tungchuh, but there is generally a heavy swell, which renders

riding there unpleasant, and vessels had better gain the anchorage under Chuh-seu island, or endeavour to reach Barren bay.

Barren Bay, formed between Gau-tau and Kin-men islands, is $2\frac{1}{2}$ miles wide at its north-eastern entrance, and besides the half tide rock just mentioned off the eastern promontory of Gau-tau, there are rocks off the eastern point of Kin-men, and a mud spit off the north-west point of Gau-tau. Immediately to the south-west of Kin-men, and separated by a deep-water channel, rather more than a cable across, is Nine Pin island, divided near the centre by a sandy isthmus, on which is the rock from whence the island is named. Very poor shelter in 6 to 8 fathoms will be found between Gau-tau and this island, the deeper water being towards the latter.

There is a channel to the westward of Nine Pin, but it cannot be recommended, as there are depths of $1\frac{1}{2}$ and 2 fathoms to the northward of Nine Pin, and between it and Pine Cone, an islet lying N.W. $2\frac{1}{2}$ miles from it. South, 2 cables from the west end of Nine Pin, is a rock which will be seen at half tide.

Fall and Chain Islands.—Fall island lies nearly 2 miles to the northward of Kin-men island, with two rocks above and one below water off its west end. The channel is safe between these islands, and also between Fall and Chain islands, but the latter are not steep-to.*

Chain islands, three in number, bear N.W. by W. $4\frac{1}{2}$ miles from Fall island. South 2 cables from the centre island is a half-tide rock, and there is a rock awash and two small islets lying off the west end of the southernmost island. Between the Chain islands and Pine Cone island, to the southward, are four detached rocks.

Caution.—Vessels should keep to the eastward of the whole group just described, for the channel inside Chuh-seu, Kinmen, Chain, and Sanmun islands is shallow, and has several rocks in it covered at high water.

Hieshan 嵵山 Group, consisting of three inhabited islands and eight rocks, lie N.E. by E. $17\frac{1}{2}$ miles from Tungchuh island, and occupy a space 5 miles in a north and south, and 2 miles in an east and west direction, but they are too small and too detached to afford shelter. The southernmost island, 320 feet above the sea, is the largest, and makes like a saddle.

The rocks are steep, with remarkable cliffs. The sea has so much undermined the northernmost, named Mushroom, as to cause it to bear some resemblance to a large mushroom. N.E. $\frac{3}{4}$ E. $1\frac{1}{2}$ mile from Mushroom is a sunken rock, with 8 feet water on it, from which the Cheng rock appears in one with the south-east end of Cliff or Sha-ho island, bearing S.S.W. $\frac{1}{2}$ W. N.N.W. a quarter mile from the Mushroom, is a rock awash at low water.

Montagu Island, or Tanto-ahan 潭頭山, 20 miles to the N.N.W. of the Hieshan group, is separated from the main islands by channels varying from 1 to $1\frac{1}{2}$ mile wide, the navigation of which is much obstructed by sunken rocks; shelter, however, in the N.E. monsoon, will be found under its south and south-west extremes. The island is 740 feet high, and nearly divided into two

* See Chart—East Coast of China, Sheet 8, No. 1,199; scale, d = 15 inches

parts, the connection being a low shingly isthmus; the northern portion is called Gore island.

To the southward of Montagu, and at the distance of 2 to 5 miles from the eastern coast of Nyew-tew island, are six islets; the southernmost, called the Twins, is 8 miles from Montagu, and the others are $1\frac{1}{2}$ to 6 miles from it, with clear channels between them. A rock awash at low water was reported in 1851 to lie S.W. 3 miles from the eastern or larger Twin. Abreast the middle islet of the five (Dike islet), and which is the nearest to the main, is Nose islet, and vessels passing between them must bear in mind that neither are steep-to; Nose islet is nearly connected with Nyew-tew island at low water.

San-mun 三門 Bay.—The entrance to this bay is 20 miles to the W.N.W. of the Hieshan islands, and it will be readily recognized by a remarkable thumb peak, 800 feet above the sea, called Tafuh-tau 大佛頭, or Budha's Head, and also Albert peak; it rises from the northern end of Tafuh island, on the northern side of the bay.

Vessels wishing to stop a tide, or driven in by bad weather, will find good shelter in the North-east monsoon in the bay immediately westward of Lea-ming island, which forms the north point of entrance of San-mun bay. In running for this anchorage, give a berth of 2 cables to the south-west point of the island, to avoid a reef lying off it. The soundings will shoal suddenly after the north peak of the island is brought to the southward of East; the bottom is soft mud.*

S.W. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles from Lea-ming, is Sanchesan 三岐山, or Triple island, and the depth between them is 10 and 11 fathoms. West, distant 6 miles from Lea-ming, is a conical islet, named Cone island, with a reef off its south end; and N.W. by N. 6 cables from Cone is a small islet with a rock off its south-east face. At 4 miles to the westward of Cone is a small islet.

Having passed to the southward of Cone island, St George island will be seen bearing N.W. 4 miles; the bay shoals gradually as this island is approached, and the anchorage in 8 fathoms at half a mile South of it is secure in N.E. winds. There is a well of good water on this island, but it is not easily got at nor plentiful.

The bay northward of St George island is shoal and full of rocks; it extends a considerable distance, leaving an isthmus 7 miles wide between it and Nimrod sound. There is an entrance into Sheipu harbour at 4 miles north of St George island, and it is frequently used by the junka.

Westward of St George island is a group of high islands, the largest of which is called Tinwan. There are several islets and rocks on the eastern face of this group, and between their western face and the main is a deep water channel, a mile wide. S.W. from Tinwan island is the embouchure of a river, on the bar of which there are only 4 feet, but deep water inside. On the left bank of the river, 5 miles from Tinwan, is the walled town of the Kien-tyau. W. by N. from Tinwan is the mouth of the Ning-haw river, on the north side of which, at 6 miles from Tinwan, is Quarry island, and to the southward of this latter island there is good anchorage in 6 and 4 fathoms; a

* See Plan of San-mun Bay and Sheipu Harbour, No. 1,904; scale, m.—0.7 of an inch.

mud spit extends 2 miles eastward from Quarry island. Between Kiam-yan and Tau-tew point, abreast of Tinwan, the hills rise abruptly from the coast line to the height of 1,000 feet; but the water shoals to 2 fathoms in some places, at the distance of 2 miles from the shore.

Tides.—At the anchorage under St George island, San-mun bay, it is high water, full and change, at 10h., 20m.; and the springs rise about 15 feet.

Sheipu 石浦 Road.—Vessels bound to the roadstead off the town of Sheipu may pass close to the northward of the islets off Gore island, the northern portion of Montagu island, and steer in West for the two forts standing on the summit of Tungmun island, which forms the southern side of the entrance to the Sheipu harbour. North of the roadstead are three islands, named Bangao; and South 3 cables from the eastern point of the centre island, Wangohi 黃芝山, are the Bangao rocks, which always show. There is deep water close to these rocks, except to the westward, where it shoals to $2\frac{1}{2}$ fathoms; to avoid which, do not bring the higher fort to the southward of West.

Cliff island, or Semo-Semo, lying nearly in the centre of the roadstead, has anchorage off its north-west end in 4 fathoms, but with a strong wind a considerable swell rolls in. A reef of rocks extends westerly from Cliff, and the channel between it and the islands off the main carries 3 fathoms water. South of Cliff is an islet, with foul ground between; and E. by S. 7 cables from Cliff is a flat rock, and between them a sunken rock. The channel eastward of Cliff island will be found very narrow; and in using it, care must be taken to avoid another sunken rock lying S.S.E. $\frac{1}{2}$ E. 4 cables from Cliff island.

Sheipu Harbour is between the main land and Nyew-tew island, and at high water it has the appearance of a splendid basin, but at low tide the mud dries off shore a long distance, giving it the appearance of a river. At the western end of the harbour is an entrance into San-mun bay, and another to the southward leading into the bay west of Lea-ming island. The town of Sheipu stands on the main, forming the northern boundary of the harbour, and derives its importance principally as a convenient stopping place for the coasting trade; the walls are in a dilapidated state, and the houses and shops are not good.

There are three very narrow entrances, with rapid tides and chow-chow water in them, leading from Sheipu head into Sheipu harbour. Two of these entrances are formed by Tungmun 東門 island. Between Tungmun and Sin island, is a rock on which H.M.S. *Sphinx* struck, in the narrowest part of the channel, and the least water on it was 10 feet, with irregular soundings around it, the deepest water being towards Sin island; it appeared very small, and is probably quite smooth. This passage is not recommended for large vessels, and if used, they should keep well over on the southern shore.

The northern entrance between Tungmun and the main, although tortuous and narrow, is safe; there is also less chow-chow water than in the middle entrance. The south entrance, between Sin and Nyew-tew, is long and narrow, and near its mouth is a small flat islet, with a reef extending eastward from it. Vessels pass to the north-eastward of this islet; but it is said the Chinese junks never use it, and they report rocks in mid-channel.

The Coast from Sheipu trends in a northerly direction about 25 miles to the entrance of Nimrod sound, and is fronted by several islets, none of which are large enough to afford shelter, and the depth generally is under 3 fathoms.

Half-tide Rock lies N.E. by N. 6 miles from the east point of Montagu island, with the Bear (an islet near the main, called Ta-muh-shan 大目山, with a sharp peak at its western end) bearing N.W.½N., and distant 11 miles. Should high tides and smooth water prevent this rock being seen, the east point of Montagu kept westward of S.W., will lead to the eastward.

Kweshan 菲山 Islands are eleven in number, besides several rocks. The largest island is 3 miles long, and deeply indented, and its greatest breadth is 1½ mile; in two places, however, it is not more than a cable or 1½ cable across. It rises near its western end into a sharp peak, 490 feet high; its coast line is steep, high cliffs, and, with the exception of six small sandy bays, the island is steep-to on all but its western side. The other islands are much smaller. The whole group is thickly populated, the inhabitants subsisting principally on fish; they have pigs, goats, a few fowls, and sweet potatoes.

Patahecock, or Pah-tsz'-koh 八字角, the south-easternmost of the group, is remarkable from its flat and table-like appearance. It lies North 31 miles from Saddle island, the south-western island of the Hieshan group, and its summit is 450 feet above the sea.

The north-eastern island of the group is a narrow cliff islet, uninhabited; to the westward are four small islets inhabited and cultivated; and North of them, at the distance of 3 cables, is a flat precipitous rock, the coloured appearance of which (it being composed of red porphyry) renders it remarkable. This face of the islands is free from danger, the depth being 7 or 8 fathoms near the shore.

The north-western island of the group is the second in size, and attains an elevation of 400 feet; its northern extreme is remarkable, in consequence of several isolated masses of rock. The body of the largest island bears South of the north-west island, and between the two is a mudbank, gradually shoaling towards the larger island. By keeping the west extreme of the north-west island to the eastward of N.N.E., not less than 3 fathoms will be found, with good holding ground, and not much swell.

South of the large Kweshan island, and separated by a channel 1½ cable wide, is another island, which is also high, with steep cliffs; off its western point is a half-tide rock, and a reef runs off from its south end. The Holderness rock lies W.½N. one mile from the highest part of this latter island, and having only 6 feet water over it, occasionally breaks; from it the highest part of north-west island bears N.N.E.½E.; a small peaked islet to the south-east S.E.¾E.; and Patahecock table E.S.E., the reef of rocks lying off the south end of the nearest island being in line with it. Another sunken rock, with only 5 feet on it, lies S. by W.¾W., three-quarters of a mile from the summit of the same island; when upon it the east end of the large Kweshan is in one with the east end of the nearest island, bearing N.E.½E., and Patahecock table E. by S.¾S.

Between the Kweshan group and Bear islet to the westward, the depths vary from 6 to 3½ fathoms, gradually shoaling towards the latter.

Tides.—It is high water, full and change, in the neighbourhood of the Kweshan islands at 9h. 30m., and springs rise about 14 feet. The ebb stream out of San-mun bay will be useful in working to windward, provided the vessel heads up to the northward of N.N.W.

Between the Hieshan and the Kweshan islands the flood against a strong northerly wind causes an angry sea. At the Kweshan the change in the direction of the stream does not take place until two hours subsequent to the change of depth. From hence the flood stream comes from the southward, and its rate seldom exceeds 2 knots per hour; it will, however, sensibly assist a vessel in getting into the Chusan archipelago.

Mouse, Whelps, and Starboard Jack Rocks.—From the north extreme of the Kweshan group, the Mouse, a small rock, nearly level with the water's edge, at high water, bears N. $\frac{1}{2}$ W. $4\frac{1}{2}$ miles; the Whelps, a cluster of four small islets, W. by N. $\frac{3}{4}$ N. 8 miles; and a low flat reef, with two rocks off its eastern end, named Starboard Jack, bears N.W. $7\frac{1}{2}$ miles.

The Corkers are several isolated patches of rock lying between the Whelps and Buffaloes Nose, an island lying 6 miles to the N.N.W. From the outer or eastern rock, which is occasionally covered, Buffaloes Nose bears N.N.W. $\frac{1}{2}$ W.; there are two islets lying a cable's length to the westward of it, which, should the rock be covered, will point out its position. The distance between the Corkers and Starboard Jack is about 3 miles, and the channel between has a depth of 6 to 6 fathoms.

The Tinker is a steep cliff rock, 80 feet high, lying N. by E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles from Starboard Jack. The Buffaloes channel between them has 6 and 7 fathoms in it, and will be found the most eligible to take, in entering the archipelago during the N.E. monsoon, as the vessel will be well to windward; in using it, however, recollect that a sunken rock lies S.E. by E. 2 cables from the Tinker.

Mesan and Lanjett Islands.—Four large and several smaller islets or rocks lie three-quarters of a mile to the northward of the Tinker. The largest islet, named Mesan, is not quite a mile in circumference, and about 400 feet high, its barren summit forming one of the most remarkable features in the Buffaloes Nose channel. There are 7 and 8 fathoms water in the channel between it and the Tinker, but sunken rocks extend a short distance from both shores.

Harbour Rouse.—Between the Mesan group and Front island (which lies 3 miles to the E.N.E., and is the southernmost of the islets extending from the southern part of Beak island), is the entrance to Harbour Rouse, which will be found a convenient stopping place, in the northern monsoon, for a vessel that has missed her tide through the Beak Head channel. The entrance lies between Front island and a castellated rock 2 miles to the westward, and the depth inside varies from $5\frac{1}{2}$ to $2\frac{1}{2}$ fathoms.

Buffaloes Nose Island (Niu-pe-shan 牛鼻山), lying N.W. $\frac{1}{2}$ W. 16 miles from the north-east extreme of the Kweshan islands, is $1\frac{1}{2}$ mile long north and south, and three-quarters of a mile broad. Its eastern shore is rocky, and an islet lies off its north-west end; its western side has several deep indentations, one of which nearly separates the island into two parts. There are three

peaks on the island, the central one of which, 500 feet above the sea; is the highest. Near its northern end the island is perforated, from whence its native name is supposed to be derived.

Anchorage.—The anchorage between Buffaloes Nose and the Ploughman group is secure; during the North-east monsoon, however, the wind blows directly through, and occasional violent squalls are experienced.

Ploughman Group is composed of three islets, and the largest lies W.N.W. nearly a mile from Buffaloes Nose, the depths between varying from 5 to 18 fathoms. The largest is an even flat-topped islet, with a reef extending from its north-east point; there is also a detached reef at 6 cables N.W. by N. from the same point. The other two islets are narrow and small, and lie to the north-west of the larger one.

Junks usually pass inside the Ploughman and Buffaloes Nose, and to the westward of the Corkers; there are, however, many reefs, and the tides are strong, and vessels will do better to keep to the eastward of Buffaloes Nose. The channel between the Tinker and Starboard Jack is the best to take during the North-east monsoon, and a vessel will have better anchorage under Lubwang than under Buffaloes Nose.

Nimrod Sound, called Siang-shan kiang 象山港.—The entrance to this sound lies 5 miles to the W.N.W. of Buffaloes Nose, and is fronted by the south-west islands of the Chusan archipelago. The sound is a deep inlet, running 27 miles in a W.S.W. direction from the entrance, which is between the Hunter islands (six in number), lying near the south point, and a small island, named Bateman, lying $4\frac{1}{2}$ miles to the northward.*

From about 2 miles to the southward of the latter island the course up the sound is W.S.W. southerly to abreast Castle rock, which is on the edge of the mud on the northern shore, N.W. $\frac{1}{4}$ N. 3 miles from the Hunter islands, and should be given a berth of about half a mile. From Castle rock the edge of the mud bank, which is dry in most parts at low water, and extends $2\frac{1}{2}$ miles from the north shore, trends 5 miles towards a small low islet lying close to the shore, named Barren island.

Between Barren island and Nimrod point, on the south shore, the sound is $2\frac{1}{2}$ miles wide. Between Nimrod point and the Hunter islands, is First Cone point, with an islet off it; and to the westward of this latter point is Cone rock and David island, with a half-tide rock lying a cable's length to the north-west of the latter. Nimrod point is high, and has several sunken rocks lying 3 cables off it. Four miles within Nimrod point is an islet, which, from its central position, is called Middle island; and to the southward of this islet is the entrance to Medusa creek, which carries a depth of 4 to 6 fathoms.

Above Medusa creek the sound, between the southern shore and Parker island, contracts to three-quarters of a mile, and water is deep, and the tides strong; off the east end of this island are some dangerous rocks, which are steep-to, and only show at half-tide. S.W., $1\frac{1}{2}$ mile from Parker island, is the entrance of a small river for boats, leading up to a village 3 or 4 miles inland, having about 6 feet in it at low tide.

* See Plan of Nimrod Sound, No. 1,583; scale, $m = 0.7$ of an inch.

At 7 miles above Medusa creek the sound is separated into two branches by the Treble islands. Pass to the northward of these islands, keeping in mid-channel to avoid a half-tide rock on the northern shore.

To the north-west of the Treble islands, on the northern shore, is the village of Tung-ju, from whence there is a paved footpath, communicating with the Fung-wha branch of the Ningpo river, the distance from hence to Ningpo being 20 miles in a direct line. On the south side of the sound, at 3 miles to the south-west of the Treble islands, is also a paved footpath, leading to San-mun bay. Having passed the Treble islands, good anchorage will be found in 6 or 7 fathoms, mud, off the village of Tung-ju.

Tides.—It is high water, full and change, in Nimrod sound, at 10h. 30m.; springs rise about 20 feet.

CHAPTER VI.

EAST COAST OF CHINA.—NIMROD SOUND TO THE YANG-TSE KIANG, INCLUDING THE CHUSAN ARCHIPELAGO,

VARIATION $1^{\circ} 40'$ West, in 1861.

Chusan Archipelago.—This large assemblage of islands, of which Chusan is the principal, lies near the mainland between the parallels of $29^{\circ} 39'$ and $30^{\circ} 50'$ N. The archipelago may be entered from the southward by the Bufaloes Nose, the Beak Head, the Vernon, and the Sarah Galley channels, among which the two former channels may be considered the best to enter by, and the Vernon to go to sea. The channel to the northward of Chusan, between the chain of islands extending W.N.W. from Fishermans group and Chin-san island, is generally taken during the North-east monsoon by vessels bound to Ningpo and Chusan, and it appears clear of danger, with the exception of the Mariner reef at its western entrance.*

Luhwang 六横, the largest of the islands in the south-west part of the archipelago, is $9\frac{1}{2}$ miles long N.W. and S.E., and 6 miles wide at its broadest part, which is the western end; near the centre it is not more than 2 miles across, and not much elevated above the sea. The south-eastern body of the island rises to the height of 865 feet, being a conical bare hill; on the isthmus is an isolated peak, 718 feet high, and on the north-west side of the island are five high peaks, one of which is 910 feet above the mean level of the sea. The western part of the island, forming the eastern side of Duffield pass, has several small bays, with stone embankments extending from point to point. Cape Luhwang, the north extreme of the island, is high and bold. The island is well cultivated, and maintains a large population.

The southern face of Luhwang has two deep indentations, with sandy bays, and a reef extends 3 cables from the point abreast the Mesan and Lanjett group. Reefs also extend half a mile from the northern extreme of the latter group, narrowing the channel between them and Luhwang to less than a mile. The coast line of Luhwang immediately westward of the reef point trends to the northward, forming a deep bay with three ialets in it, extending to Duffield pass. South one mile from the easternmost ialet there is a mud bank, having $3\frac{1}{2}$ fathoms on it, to avoid which a vessel may keep the ialet aboard, giving a berth to a rock lying half a cable from its south extreme. Between this ialet and Duffield reef, which lies off the eastern side of the entrance to Duffield Pass, and consists of three rocks above water, with a sunken rock

* See Charts—East Coast of China, Sheet 8, No. 1,199; scale, $d = 15$ inches; and Chusan Archipelago, South Sheet, No. 1,439; scale, $m = 0.8$ of an inch.

between them and Luhwang, there are from 9 to 5 fathoms, good holding ground.

Fu-to Island 佛肚山, to the westward of Luhwang, is about $2\frac{1}{2}$ miles long, north and south, and a mile broad, and its southern extreme, forming a narrow point, is connected at low water to St Andrew island. A spit runs off the north extreme of Fu-to, the north-east of which are three islets, with a rock lying a cable's length to the north-west of the northernmost, named Ohloe island.

Tree-a-top island lies $3\frac{1}{2}$ cables to the southward of the south extreme of Fu-to, with a deep water channel between. This island, 180 feet high and about 4 cables in circumference, has a pile of stones on its summit, but no tree; the old name, however, given it by Thornton in 1703 is still adhered to.

Buffeld Pass, between Luhwang and Fu-to, is $1\frac{1}{2}$ mile wide at the southern entrance (where the water suddenly deepens from $5\frac{1}{2}$ to 40 fathoms), and half a mile in the narrowest part, which is near the centre. On the Fu-to island shore are several islets; among them the water shoals to $4\frac{1}{2}$ and 5 fathoms, and a vessel may anchor and stop a tide, if necessary. Off the fourth point on the Luhwang side is a reef extending a cable from the shore; otherwise this side of Luhwang is very steep-to, the depth being 35 fathoms within a cable of the mud. Two small islets, named the Notches, lie in the centre of the pass, abreast this reef, and between them and Fu-to is a half-tide rock; unless this rock shows, vessels should not tack inside the Notches so as to pass westward of them.

At the north end of the pass there is a rock with only 16 feet over it at low water, lying 2 cables eastward of Hebe island; when on it, the north extremes of Hebe and Ohloe islets are in one, bearing N.W. by W., and the east extreme of Fu-to is in one with the west extreme of Tree-a-top island, seen over the mud connecting St Andrew with Fu-to. On the Luhwang side, to the north-east of Hebe island, and a cable from the shore, is the Bird rock, which formerly had a stone pillar on it. Two islets lie 2 cables to the southward of Bird rock. Beyond the rock, the coast-line of Luhwang turns suddenly to the north-east to Cape Luhwang.

Gough Pass, formed between Fu-to island and the Central isles, is $1\frac{1}{2}$ mile long and half a mile wide, and is far preferable either to Buffeld or Roberts pass, for both shores are steep-to, and the lead, if hove quickly, will give warning of approach to the shoal which extends half a mile to the S.S.W. from the southern islet of the Central islands.

The south-western of the Central islands is a small islet, connected at low water with the largest of the group by a reef and spit. At half a cable's length to the northward of the northern island is a reef.

Roberts Pass is to the westward of the Central islands, between them and the mud, which dries one mile from the embankment on Mei-shan island. This channel is 2 miles long, N.E. and S.W., and 4 cables wide; but as the lead will give no warning, its boundary on the Mei-shan side will not be known except at low water; the depths in it vary from 6 to 40 fathoms. Mei-shan 梅山 island appears formerly to have been eight islands, now, however, united by substantial stone walls, one of which, on its northern face, is $1\frac{1}{2}$

mile is extent. The mud dries $1\frac{1}{2}$ mile from its south, and a quarter of a mile from its north end; on its east side the bank is steep-to.

On the north-eastern side of Mei-shan are the two Damson islets, from the northernmost of which, named Cliff islet, the 3 fathoms line extends nearly a mile to the northward. By keeping the Central islands open of the Damson islets, until the vessel is three-quarters of a mile past the Cliff islet, this shoal will be avoided, and the Ketau shore can be approached. The course for Ketau 岐頭 point, after clearing this pass and Gough pass, will be N.E. $9\frac{1}{2}$ miles.

Junk Channel, between Mei-shan island and the Ketau shore, is $2\frac{1}{2}$ cables wide, and carries a depth of 5 and 6 fathoms, except at the southern entrance, where it shoals considerably, and not more than 10 feet water was obtained; some parts, however, may be deeper, as only one line of soundings was taken, across the bar. On the mainland, near the centre of this channel, is a custom-house, and the entrance to a canal which communicates with the two populous villages. Two miles to the northward of Mei-shan is the walled town of Kwokeu so, 霸渠所.

Anchorage will be found anywhere along the Ketau shore, between Mei-shan and Ketau point, until abreast of Sing-lo-san island, where the water deepens.

Caution.—As there is no anchorage besides the above, but in very deep water, until that under Elephant island is reached, it would not be prudent for sailing vessels to proceed farther, unless the wind and tide will ensure their gaining that position.

Tides.—In the above Passes, at full and change, the first of the flood often comes from the north ward, and runs sometimes for 3 hours before it takes the direction of the ocean tide.

Beak Head Channel, or Taou-say-mun 條帶門, is the next passage north-east of Buffaloe Nose channel, and considered one of the best to enter the archipelago by from the southward. The entrance is between Beak head, east extreme of Beak island, and Vernon point, the east end of Vernon island, which bear N.N.E. $\frac{1}{2}$ E. and S.S.W. $\frac{1}{2}$ W. from each other, distant $2\frac{1}{2}$ miles. Beak Head island, or Tung-lo shan 銅鑼山, is nearly 5 miles long, in some parts very narrow, and remarkable for two hummocks near its west end. Off Beak head are three islets; and to the south-westward of the head are several islets and a rock, which, together with Luhwang island, form Harbour Rouse, which will be found a convenient stopping place for a vessel that has missed her tide through the Beak head channel. The channel between Luhwang and Beak island has $3\frac{1}{2}$ fathoms water; but there would be no object in using it while there are passages so superior.

Off the north-east face of Beak island are two reefs, lying 3 cables' and half a cable's length respectively from the shore. Off the north end of the island are Gull, Shag, and Puffin islands, with a reef of rocks above water between the two former; a reef also extends 3 cables from the north-west end of Puffin island. Near the west end of Beak island the channel narrows to half a mile between the reef of rocks, the northernmost of which is always above water,

and two small islets lying off the south side of Conical Hill island. This island is midway between Beak and Vernon islands, and between it and the latter are two islets, the reefs off which render the channel between Conical Hill and Vernon islands more intricate.

Directions.—A N.W. by W. $\frac{1}{2}$ W. course for $8\frac{1}{2}$ miles from the eastern entrance of Beak Head channel will lead to the southward of Conical Hill and Conway islands, and from thence a N.W. course will clear the channel; care must, however, be taken in light winds to give the Pai rock, the last islet on the north side of the channel, a wide berth, as the flood sets directly towards it. Good anchorage in 9 and 10 fathoms will be found on the north-west side of Conway.

To the northward of Conway island is a group of islets and rocks, through which there is a passage into the Vernon channel; but owing to the rapidity of the tides, it should not be attempted without local experience. On the Luhwang side of Beak Head channel is a reef, and an islet with a small pinnacle on it; the reef, which is generally uncovered, bears S.E. $\frac{1}{2}$ S. 2 miles from Cape Luhwang, and by keeping the cape to the westward of N.W. $\frac{1}{2}$ N. it will be avoided. The mud dries 7 cables from the Luhwang shore, in the bight to the southward of this reef. Landing is difficult on this side of Luhwang, except at high water.

Vernon Channel, or South-east passage (Hea-che-mun 蝦岐門), to the northward of Beak Head channel, is formed by Vernon island on the south and Taou-hwa island on the north. This will be found a convenient passage from Chusan during the northern monsoon, the distance from Elephant island to the open sea being only 17 miles; it should not, however, be attempted with light winds, as vessels are liable to be becalmed and experience flaws under the high lands of Taou-hwa, and in some parts the depths are 60 fathoms, and the tides strong.

Vernon island, or Hia-chi shan 蝦岐山, is $5\frac{1}{2}$ miles long in a W.N.W. and E.N.E. direction, and on its north-east side is a wide bay, with two islets and a reef in it, where vessels may anchor in 4 and 5 fathoms, and procure water from Taou-hwa island 桃花山; there are several cascades, and the water may be obtained without removing the casks from the boats. The east end of Vernon island is rugged, with large boulders of granite; at this end there is a cove, which runs back three-quarters of a mile to the westward, and affords shelter for boats.

The eastern entrance to the Vernon channel is $1\frac{1}{2}$ mile wide, but 5 miles within it is divided into two passages by John Peak island, which has a rock lying half a cable's length from its north-east extreme, and uncovers at the last quarter ebb. The passage on the north-east side of John Peak is only $3\frac{1}{2}$ cables' wide between this rock and two small islets and some rocks which bound its north side. The passage between John Peak and Vernon islands is half a mile wide, and good anchorage will be found on the south side of the former. The Taou-hwa shore is bold and precipitous, and the peak of the island rises to the height of 1,680 feet above the sea. Near its western end the land becomes low, rising, however, again, and surmounted by a peculiar perpendicular

crag, called Miller's Thumb, 606 feet high, which will be recognized nearly throughout this part of the archipelago.

Sarah Galley Channel, the next passage to the northward of the Vernon, is by no means so eligible as those just described. Near the entrance, at 4 miles N.E. by E. $\frac{3}{4}$ E. from the south point of Taou-hwa island, will be seen the Jansen or Laoush rock, a steep cliff islet, with rocks extending $1\frac{1}{2}$ cable from its south end; there is also a half-tide rock lying W. by N. $\frac{3}{4}$ N., $1\frac{1}{4}$ mile from the north extreme of the Laoush, with the highest part of Ousha island bearing N.N.E. $\frac{1}{4}$ E. $1\frac{1}{2}$ mile.

The coast line of Ousha 烏沙 island is steep cliffs, and off its north-west end is a ledge of rocks; the southern end of the island is the highest, and rises in a round peak. The channel between the north-east point of Taou-hwa island and Peak island is not navigable, owing to reefs and strong tides; neither is there a fit passage between Peak island and Tang-fau. Vessels may pass between Peak island and the two patches of rock lying westward of Ousha; but there are some rocks off the north end of Peak, which must be avoided.

The channel, named Cambrian pass, between Ousha and the large island of Chukea, or Chus Peak, is 2 cables wide, but from the violence of the tides, it should not be used without a commanding breeze.

Directions.—Vessels entering the Sarah Galley channel from the southward generally pass westward of Laoush rock and Ousha island, and from thence the channel is between the latter island and the two patches of rock to the westward, which are almost covered at high water; they lie N.N.E. and S.S.W. of one another, 2 cables apart, and the distance between them and Ousha is half a mile. After passing these rocks, the course is North $2\frac{1}{2}$ miles, leaving two small islets, named Teen and Yung, and a reef between them, to the westward; and Hut island (so called from a house on its summit) with a reef of rocks off its south extreme, to the eastward. The channel here is three-quarters of a mile wide.

From thence steer N.W. by N. for $1\frac{1}{2}$ mile, leaving an island with two hummocks to the southward, and Druid island to the northward; but be careful after passing Hut island, that Flat or Liwan island (at the west entrance to the channel) is not brought westward of W. by N. $\frac{1}{2}$ N., as the water shoals suddenly on the north side of the channel, and the mud dries nearly all the way from Druid island to South Chukea island, leaving a small boat channel.

When in the vicinity of Liwan island the east end of Chusan will be seen, having on it a small temple, composed of large stone slabs. Between Liwan and Chusan is Lokea island, the southern shore of which is not steep-to; and this is the case with the whole of the islets on the south side of Chusan, between this and Pih-lou, after which they become steep-to. After passing the smaller islets south of Ta-kan the shoal water will be avoided, when standing northward, by not bringing the rocks off the southern part of Pih-lou on with Trunk point on Elephant island. Liwan has two rocks off its south end.

Chukea Island, or Chu-kia-tsun 朱家尖, is about 7 miles long, north and south, and on its western side are many deep indentations, some of which are enclosed from the sea by stone walls. Near its south extreme are four

remarkable peaks, and near its centre is a smooth-topped cone, 1,164 feet high, named Chukea peak, which is one of the most prominent objects in making this part of the archipelago.

There are several indentations on the eastern side of this island, and the southern one, Wolf bay, affords anchorage in the North-east monsoon, and was resorted to in 1842 by the men-of-war from Chusan for water. On the north side of the bay is a black inlet, with rocks extending southerly and easterly from it. Fronting the bay, and $1\frac{1}{2}$ mile from the shore, is a peaked rock, named Pillar, off which, at 2 cables to the N.E., are two reefs, showing at half tide. In the small inlet north of Wolf bay is a reef visible at low water, and it will be avoided by tacking outside the headlands; Nob rock lies 3 cables from the north point of the bay, and is always above water.

Tongting and Pihing Islands, and Pelican Rock.—To the eastward of Chukea, at the distance of 5 and 8 miles, are two islets named Pihing 北嵴 and Tongting 東嵴. Tongting, the outer one, about 40 feet high, has detached reefs to the south-west of it. Pihing is a similar islet.

The Pelican rock lies $2\frac{1}{2}$ miles from the Chukea shore, and only shows at low water springs; but the disturbed water over it, when covered, will generally indicate its position. From the rock, Yangi islet, off the north-east end of Chukea, is in line with the summit of Putu island, N.N.W. $\frac{1}{2}$ W.; Pihing islet bears E. $\frac{1}{2}$ N.; and Chukea peak N.W. $\frac{1}{2}$ W.

Putu Island 普陀山 lies $1\frac{1}{2}$ mile from Whang head, the east extreme of Chusan, and the channel between is called by the Chinese Leenhwa-yang 蓮花洋, or the Sea of Water Lilies. The island is $3\frac{1}{2}$ miles long, north and south, and in one place only half a mile across. The temples on it are numerous, but the two largest, which are on its eastern side, are falling into decay. A narrow projecting point extends from the eastern side of the island, forming to the southward a deep sandy bay, in which there are 3 fathoms water; the islet off the point has a sunken rock lying on its eastern side. The western face of Putu is shoal, the $2\frac{1}{2}$ fathoms line of soundings being 3 cables from the shore. A smaller islet, with rocks to the northward of it, lies off the north end of Putu; vessels may pass between the rocks and the islet.

Water.—A stream runs into the above bay, on the eastern side of Putu, and it might be used, should the well at the south side of the island prove dry. This stream runs in a small sandy bay to the westward of a hill with three chimneys on it, and may be known by a small joss-house. The landing place of the pilgrims is at a causeway east of the well bay.

Anchorage.—There is anchorage off the eastern side of Putu in 12 and 14 fathoms water, but several vessels have had a difficulty in purchasing their anchors; it is also much exposed, and by no means desirable in bad weather.

Isthmus Island is three-quarters of a mile from the north-east point of Putu, and the channel between has deep water. A half tide rock lies 4 cables from the south-east point of Isthmus, with the east and south-east extremes of Putu in one bearing S.W. $\frac{1}{2}$ E., and the south summit of Isthmus W. $\frac{1}{2}$ N.

To the eastward of the south point of Putu, and off the north-east end of Chukea, are four islands, named Loka, Pih-sha, Lakesh, and Lakeati. There is

a passage between them and Chukea, and a good channel between them and Putu.

N.E. Island and Ninepin Rocks.—N.E. island is a conical rock, in form something like a haystack, lying N.E. $\frac{1}{2}$ E. 2 miles from the north-east end of Isthmus island. The Ninepins are four pinnacle rocks with reefs around them, lying a mile to the south-eastward of N.E. island, and N.E. by E. $\frac{1}{2}$ E. 5 miles from the summit of Putu island.

East Islet and East Rock lie respectively 6 and 7 $\frac{1}{2}$ miles to the eastward of Putu. The islet is 30 feet above the sea, and from it, Loka, the northernmost of the islands on the north-east face of Chukea, bears W. by S. East rock, which is nearly awash at low water, lies E. by S. 2 miles from East islet, with Tongting islet bearing S. by E. $\frac{1}{2}$ E. 7 miles, and the summit of Putu (which will be known by a look-out house on its summit, and the high land of Chusan forming a table-top at the back of it) W. by N. $\frac{1}{2}$ N. This rock forms the southern horn of Lansew bay; Video island, Fisherman's group, and the chain of islands to the westward, bounding the bay to the northward.

Chusan Island 舟山, so called from its supposed resemblance to a boat, is 51 $\frac{1}{2}$ miles in circumference; its extreme length in a N.W. and S.E. direction being 20 $\frac{1}{2}$ miles, and its greatest breadth 10 $\frac{1}{2}$ miles. From the beach at Ting-hai, on the south side of the island, to the northern shore, the distance across is 7 miles; towards the east end it becomes narrower. Besides the harbour of Ting-hai, there are three other commercial ports, viz., Chinkeamua 沈家門, at the south-east end of the island, Ching-keang 岑港 on the north-west side, and Sha-sou 沙澳 at the north end. The town of Ting-hai (定海縣 Tinghai hien) is 1 $\frac{1}{2}$ mile in circumference, and is surrounded by a wall 14 $\frac{1}{2}$ feet high and 13 feet wide, surmounted by a parapet 14 $\frac{1}{2}$ feet high and 2 feet wide.

Ting-hai Harbour, formed on the south side of Chusan, is fronted by many small islands, between which are the several channels leading to it. The outermost and westernmost island is Ta-maou, or Tower-hill; east of which, and distant 1 and 4 $\frac{1}{2}$ miles respectively, are Teijo or Elephant island, and Pih-low. Within, or to the northward of these, reckoning from the westward, are the islands called Ha-tse or Bell, Pwanche or Tea, Seaou-keu or Deer, and Ao-shan. The two small islands Tawu or Trumball, and Wue-wu or Maclefield, lie inshore or to the north-east of Tea island, and there are many small islands and rocks among those larger ones just named.

The harbour is difficult of access in all its approaches, owing to the strong tides and sunken rocks. The best approach is through Tower-hill and Bell channels, between Tower-hill and Bell islands, and between the latter island and Tea island, in which no hidden danger has been found; the tides, however, are strong, and sailing vessels in light winds must be careful that they are not set by their influence between Tea and Elephant islands, where the ground is foul and the narrow channels deep.*

* See Chart :—Chusan Archipelago, North Sheet, No. 1,300; scale, m=0.8 of an inch; and Ting-hai Harbour, No. 1,306, scale, m=4 inches.

Directions through Tower Hill Channel.—The best approach to Ting-hai harbour, for large or unhandy vessels, is through Tower Hill channel. Unless favoured by a commanding breeze and neap tides, they ought not to take the channel between Roundabout island and Ketau point, as the tides run there with great strength. After passing eastward of Roundabout, steer to pass a convenient distance from the south extreme of Tower Hill island. Should the tide fail, anchorage will be found under the islands to the eastward of Tygosan island; for which purpose pass 3 cables to the southward of Square Stone islet, to avoid the reef lying $1\frac{1}{2}$ cable to the S.W. of it, and anchor before the channel between Little Tygosan and Chuen-pi islands opens, as the water shoals suddenly off the east end of Entrance island, the islet to the south-westward.

Having rounded Tower Hill island, haul up, steering first for Bell island, then for Tea island. The soundings in Bell channel, between Bell and Tower Hill islands, vary from 30 to 40 fathoms, except off the north-west end of the latter, where there is a mud bank, with 3 fathoms over it, extending $1\frac{1}{2}$ cable from the shore.

Good anchorage will be found in 10 and 12 fathoms water between Bell and Tea islands, but vessels intending to remain here should not open the channel between Bell island and Chusan, as the tides are stronger and the ground loose. On proceeding from hence to Ting-hai harbour, take care to avoid the Nab, a sunken rock, with 14 feet over it at low water, lying $2\frac{1}{2}$ cables from the Chusan shore, and South of a small hillock in the valley near the shore; the marks for it are, Taching point, the west extreme of Tea island, in one with the east side of Taewang or Bell rock, S. $\frac{1}{4}$ W., and the south point of Guardhouse islet nearly in line with the summit of Trumball island. A 3 fathoms patch also lies about $3\frac{1}{2}$ cables W.S.W. of the Nab, and E. by N. $\frac{1}{2}$ N. nearly 4 cables from Ap-tan-shan island.

The anchorage, named Spithead, on the Chusan shore, between the Nab rock and Guardhouse isle, will be found a convenient place for watering; the anchoring ground is steep-to, and tides are irregular, and off the entrance to the watering creek is a mud flat, having 3 fathoms on it at low water. With light winds, vessels should avoid the strength of the ebb, when passing through the channel between Tea and Guardhouse islands, which otherwise is liable to set them through the southern or Melville channel. A ledge of rocks, covered at high water, extends a cable's length from the high water mark at Kouching point, the north extreme of Tea island.

In proceeding towards Ting-hai harbour, and being abreast of Guardhouse isle, steer towards Macclesfield island, taking care to avoid the Middle Ground, which has only 2 feet on its shoalest part. Tower Hill in line with the slope on the southern rise of Tea island will lead along the southern edge of this shoal, in 4 fathoms. The Wae-wu channel is only $2\frac{1}{2}$ cables wide between the 3 fathoms line on the edge of the Middle Ground and Wae-wu island. The usual anchorage is abreast of Taotau 大衛, the suburb of Ting-hai, but vessels must moor, as the eddies are strong. The channel between Chusan and Guardhouse isle is only fit for boats.

Caution.—Spring tides set at the rate of 3 and $3\frac{1}{2}$ knots per hour in the

Tower Hill channel, and with light winds and a strong flood vessels have been swept away to the westward, and carried by the tide beyond Just-in-the-Way, and even through the Blackwall channel; and after rounding Tower Hill and entering the Bell channel, many have been borne by the ebb amongst the islands between Tower Hill and Elephant island, or between the latter and Tea island, where the channels are narrow, the water deep, and the ground foul. In these cases the bower anchors and chains should not be used, but a good kedg and stout hawser, which (as the holding ground is good, and if care be taken to con the vessel and not break her sheer) will bring a vessel up, and prevent her being driven into these narrow passages, where some have been brought up in from 30 to 40 fathoms water, with two anchors down, and three or four round turns in their hawse.

Having rounded the north end of Tea island with a strong ebb, it is necessary to guard against its taking the vessel through the Melville channel; and if not able to pass to the northward of Macclesfield island, send the boats a-head, and endeavour to keep the vessel to the northward of Takeu and Sarah islands, where the water is not so deep.

Through Melville Channel.—The Melville or southern passage to Ting-hai harbour is between Elephant and Deer islands, but as two sunken rocks lie in the centre of the channel and narrow it to $1\frac{1}{2}$ cable, it should not be attempted unless there is a commanding breeze, and the mariner has a thorough knowledge of their position. Its navigation is rendered more difficult in the neighbourhood of these dangers by the tidal streams, which, rushing through four different channels into this, form eddies which render a vessel unmanageable, even with a good breeze at the springs. In taking it at the neaps, a boat will be found useful ahead.

The entrance to this channel will be easily recognized by Elephant island, which is remarkable from a curious crag near the summit; and by a cone-topped island, named Pating, to the N.N.E. of it. There is anchorage in the southern part of the channel between Elephant and Tung islet, in 16 and 18 fathoms; but the holding ground is not good. Beyond Round island, which lies 4 cables from the north-east point of Elephant, the water deepens to 28 and 40 fathoms to the southern rock, on which H.M.S. *Melville* struck in 1840.

The Melville rock, which has only 10 feet water over it, lies S.E. by E $\frac{3}{4}$ E. 2 cables from the Black rock, and E. by N. $\frac{1}{2}$ N. $1\frac{1}{2}$ cable from the rocky ledge extending towards it from Ledge island, and which covers at half tide; the marks for it are, the Cap rock in line with the saddle of Kintang island, bearing W. by N., and the temple on the hill near the suburbs of Ting-hai showing between Trumball and Sarah islands, N. $\frac{1}{2}$ E. The northern or Dundas rock is a small patch, about 30 feet by 20 feet in extent, lying N. $\frac{1}{2}$ W., $1\frac{1}{2}$ cable from Melville rock, and N.E. by E. $\frac{3}{4}$ E. 2 cables from the Black rock, and the least water on it is 9 feet; the marks for it are, a bushy tree on the eastern slope of Ta-keu island, in line with the middle beacon on Tsingly Tau or Beacon hill, N.E. $\frac{1}{4}$ E., and the north end of the Black rock on with the south side of Cap rock W.S.W.

From Roundabout island a N.W. $\frac{1}{2}$ N. course for $4\frac{1}{2}$ miles will lead to the entrance of the Melville channel. Pass on either side of Round island; and

when to the northward of it, keep its east extreme touching Trunk point, bearing $S. \frac{1}{2} W.$, and this mark will lead between the Melville rock and Ledge island, and between the Dundas rock and Black rock, rather westward of mid-channel. When clear of the Dundas, keep in mid-channel; and when abreast the south end of Sarah island, steer for the west end of Macclesfield island, which should be rounded rather close, to avoid the Middle Ground, the southern edge of which, in 3 fathoms, is only $2 \frac{1}{2}$ cables distant. A rock, covered at high water, lies barely a cable's length from the northern face of Macclesfield.

Through Deer Island Channel.—Ting-hai harbour may also be entered from the eastward, by passing between Deer and Takeu islands, which are 14 cable apart. The Melville and Dundas rocks will be avoided by keeping Deer island aboard, but it must be borne in mind that neither shore of the channel is steep-to. The Beacon rock, awash at high water, to the north-east of Takeu, may be passed on either side; and from thence steer for the Chusan shore, keeping a cable's length to the eastward of Grave island until the harbour beacon opens north of it, when it can be steered for, passing between it and the Chusan shore, keeping the latter aboard, until Takeu island is shut in by Trumball island.

This passage, although narrower, is superior to the Melville channel, as vessels have the tide in their favour all the way. The principal objection to its use is the liability to flaws of wind under Deer island; but the main point to be guarded against is the flood from the eastern channels carrying them so far westward as not to fetch far enough to the eastward of Grave island. There is convenient anchorage between Trumball and Taken islands, in 8 and 10 fathoms. A spit extends from the south-east end of Trumball, the 3 fathoms line being 3 cables distant from the shore; the south end of Macclesfield island, open of the summit of Tea island, will lead south of it.

The Channel between Bell Island and Chusan is not recommended, owing to the tides, which attain the rate of 5 knots at springs. Nearly mid-channel is a half-tide rock, named Kwa-fau, with a stone beacon on it; and to the S.W. of the beacon is a 9-foot patch lying with the south end of Kwo-kao, the westernmost of the two islets on the Chusan shore, in line with the south end of Kiddisol island. Neither is the north end of Bell island steep-to; consequently, should a vessel use this passage, the channel between the beacon and the Chusan shore should be preferred to that between the beacon and Bell island.

Kiddisol Island, which has a patch of $2 \frac{1}{2}$ fathoms off its south-west end, lies 2 cables to the southward of Yanglo point, the south-west extreme of Chusan, with a deep water channel between, but the eddies are violent at the springs. From hence to Sinkong point, 4 miles to the N.W. by N., the coast line of Chusan is mud, with the exception of a small hillock at the edge of low water.*

Anchorage in 10 and 12 fathoms will be found all along the Chusan shore between Yanglo and Sinkong points; but in standing towards the shore, bear in mind that the water shoals suddenly after 10 fathoms.

Ching-keang Harbour, on the western side of Chusan, and distant 7 miles

* See Chart of Kintang Channel, No 1,770; scale, $m = 1 \frac{1}{2}$ inches.

in a direct line from Ting-hai, is formed by the islands, Wai-teo 外約, Lin 中約, and Lateo 裡約, (i.e. Outer, Middle, and Inner Hook) and Chusan. Upon the islands, and on the point near the entrance, are extensive stone quarries. A white rock lies off the south-west point of Wai-teo, and a mud spit extends from the island nearly to the rock. Between Wai-teo and Chusan the entrance to the channel is 6 cables wide, with 7 and 8 fathoms water in it, forming a snug anchorage, much frequented by the junks as a stopping place, and defended from pirates by a fort. Abreast of Lin the channel is less than a cable wide, with 7 fathoms water. The town stands on the banks of a stream on the Chusan shore, which at high tide is navigable for boats. Here the channel is also less than a cable wide, and the depth from 5 to 4 fathoms.

Steward Rock, 50 feet above the sea, lies in the middle of Blackwall channel, between Chusan and Kintang island. The depths are 45 fathoms in its vicinity, except at 2 cables to the eastward, where there is a rocky patch, on which the least water that has been found is 9 fathoms.

Kintang 金塘 or **Silver Island** lies between the west end of Chusan and the entrance of the Ning-po river. Near its south-east extreme is a remarkable saddle hill, 1,432 feet high, which, with the Cap rock, forms one of the marks for the Melville rock; there is also another remarkable peak, 1,520 feet high, rising at $1\frac{1}{4}$ mile to the northward of the saddle hill.

Alligator point, the south end of Kintang, has a reef, which covers at half tide, extending 2 cables to the southward; and off Algerine point, the south-east extreme of the island, is an islet, connected at low tide by a mud flat, from which a ledge of rocks extends S.S.E. 2 cables, the south end covering at high water. The eastern face of the island is bold-to, without any anchorage along it.

Ta-outse Harbour.—Off the north end of Kintang there is a group of seven islets, amongst which there is anchorage; and off the north-west end is Taping island, to the southward of which is the small harbour of Ta-outse, which affords good anchorage in 7 to 10 fathoms. The entrance is between Kintang and Ta-outse island, and the channel is barely 2 cables wide. Between Ta-outse and Taping there are not more than 8 feet at low water. Ta-outse harbour is small, but affords good anchorage, and may be recommended as a sanitary station for vessels obliged to make a lengthened stay in the Yung river. Supplies of all kinds can be readily obtained by native boats from Ning-po.

Blackwall Channel.—Tsih-tze 册字 or Blackwall island, which give its name to this channel, is about 6 miles in circumference, and divides the northern entrance into two passages, one between Blackwall island and the north-east end of Kintang, called Blackwall pass, and the other between the four islets on the Chusan shore and Blackwall, named Ku-tsu pass. The southern entrance, between Kiddisol and the south-east end of Kintang, is nearly 5 miles wide, and just within it is the Steward rock described above.

From the anchorage off Sinkong point the distance through the Blackwall pass is 6 miles, and no anchorage will be found until to the northward of Blackwall island near Cliff islet, but this is exposed to northerly winds. This pass is three-quarters of a mile wide, and in it the eddies are so strong that

vessels have been turned round in a double-reefed topsail breeze. Rondo, a small islet, lies off the south-west end of Blackwall island, and there is deep water between them, but the Kintang side will be found the best to border on. There is a long bay on the Blackwall side, from the north end of which, Blackwall point, a reef extends westerly $1\frac{1}{4}$ cable; to avoid it, do not open the Steward rock to the eastward of Rondo islet.

Between Blackwall and Chusan is a flat island, named Ketsu, or Ku-tsu 菰茨; and the channel between it and Blackwall is 3 cables wide, but not recommended, as the tides are strong, and a sunken rock lies $1\frac{1}{4}$ cable from the north-east point of Blackwall. Between Kutsu and Chusan the channel is only a cable wide, and neither shore is steep-to.

Broken Island, or Ma-muh shan 馬目山, which is connected at low water to the north-west extreme of Chusan by a mud bank, is steep-to on its north-eastern side. Crack islet lies about half a mile from its north point, and between them is a narrow channel, carrying a depth of 5 to 8 fathoms, but it is not calculated for vessels of large draught, as a bank, with 6 to 18 feet on it, extends a mile from the north-west point of Broken island. A mud spit runs off north-westerly 4 cables from Crack islet.

N.W. $3\frac{1}{4}$ miles from Broken island is a group of low islets called Dunster-ville, which may be approached as convenient, the depth of water between them and Crack islet varying from 5 to 4 fathoms. The tides are strong in this neighbourhood, the flood running to the west, and the ebb to the east.

Sha-aou Harbour, or North bay, formed between Chang-pih 長白山 or Fisher island, and the north end of Chusan, is 2 miles long, $1\frac{1}{2}$ mile wide, and has a varying depth from 5 to 9 fathoms. Broken island, as before stated, is steep-to on its north-east side, but shoal water extends half a mile from the west end of Chang-pih. The southern shore of Chang-pih is an extensive mud bank, a considerable portion of which has been enclosed from the sea by embankment; the water is shoal off its south-east end, the 3 fathoms line being half a mile from the shore.*

The shore of Chusan is bordered by a mud bank, which renders landing, unless at high water, difficult, except in one place near the eastern end of the harbour, where there is a causeway. Near the causeway are some houses, but the principal village is situated some distance up the valley. A small islet lies off the north end of Chang-pih, and a group of islets, named Cluster or Mid-way islands, off the north-east end.

Directions from Sha-aou Harbour through Kwei Channel.—Vessels bound to the eastward from Sha-aou harbour may pass either through the Kwei channel, between Lan-sew or Sheppey island and Chusan, or to the northward of Lan-sew, which is the better channel of the two, but both are difficult for a stranger. A sunken rock lies on the Chusan shore, S.E. 2 miles from the south-east point of Chang-pih, and from it the south extreme of Chang-pih bears W. $\frac{1}{2}$ N., the largest of the Cluster islets N. $\frac{1}{4}$ W., and the summit of Lan-sew E. by N. $\frac{1}{4}$ N.

* See Plan of North Bay, No. 1744; scale, m=1.2 inches.

The Houbland islets are between Chang-pih and Lan-sew, but nearer to the latter; the Kwei channel is between them and two rocks lying on the Chusan shore off Ma-ou point, and then south of Grain or Sewshan islet, which lies 2 cables from the south point of Lan-sew. The channel here is 2 cables wide, being formed between the small islet with a reef off its south-east end, lying south of Grain islet, and Kanlan point on the Chusan shore, and it should not be attempted during the strength of the tide. There is another channel, named the Kwi-mun, closer to the Chusan shore; it is, however, crooked, and there is a sunken rock near the centre.

The island of Lan-sew 蘭秀 appears formerly to have been two, the intervening space having been gained from the sea by embanking; it is now called by the Chinese Lan-shan and Sew-shan, and is $3\frac{1}{2}$ miles long, and $2\frac{1}{2}$ miles broad.

Through Channel North of Lan-sew.—To pass north of Lan-sew, when leaving the anchorage in Sha-ou harbour by the Chang-pih channel, steer about N.E. by E. for Kwi-si, a barren island, with a round peak upon it. The south-east side of this island is steep-to, and the distance between it and the north-west point of Lan-sew is $1\frac{1}{2}$ mile; a mud bank dries $1\frac{1}{2}$ mile from the western side of the latter, and is steep-to, the lead giving no warning, but its northern edge will be avoided by keeping the north end of Mo-un islet (the largest islet off the north end of Lan-sew) open northward of the north extreme of Lan-sew.

Having passed Kwi-si, steer for Kwan island 官山, which must be kept close aboard, to avoid a reef which lies half a mile to the southward, and covers at high water; from the reef Kwi-si hill bears W. by N., and the highest part of Lan-sew S.S.W. $\frac{1}{2}$ W.; the ground between this reef and Lan-sew is foul. Although the channel is half a-mile wide, it is difficult to shoot it, owing to the eddy tides and flaws off Kwan. When the reef is passed, take care to avoid a ledge of rocks extending a short distance from the north-west point of Mo-un, which bounds the channel to the southward.

To the eastward of Kwan are nine islands, lying off the south-east end of Tae-shan; a reef lies off the southern end of the first. From thence an East course may be steered along the southern coast of Keu-shan island and the Fisherman's group.

Anchorage.—Vessels wishing to anchor on the east side of Lan-sew island may haul to the southward, after passing the first islet east of Mo-un, running between it and Gan-ching, a cluster of rocks to the eastward. At the east end of Lan-sew is a low cliff, named Harty island, which may be passed at a cable's length, and anchorage will then be found in 5 fathoms; the water shoaling gradually towards the shore. H.M.S. *Pylades* anchored here in $5\frac{1}{2}$ fathoms, with the east end of Harty island bearing N. $\frac{1}{2}$ W. and distant 6 cables, and Grain islet S.W. by W. In the northerly monsoon there is a better anchorage at 7 miles to the north-eastward in Peaked Rock bay, on the southern shore of Keu-shan.

Cliffs and Doub Rocks.—To the eastward of Lan-sew, at the distance of 2 miles and 5 miles respectively, are two cliff islets, called Cliffs and Doub rocks. South 2 cables from Cliffs, the western islet, is a ledge of rocks nearly

awash at high water, and in its neighbourhood the ground is foul; there are rocks, also, which show at low water, lying $1\frac{1}{4}$ cable from the north-east point of the same islet.

N.E. and East Coasts of Chusan.—The north-east coast of Chusan, eastward of Lan-sew, trends to the S.E. for 11 miles to Whang head, a low peninsula forming the east end of Chusan. At the distance of 3 miles is Thornton island, with a narrow passage between it and Chusan, and a deep bay westward of it, in which the mud dries out a long way, rendering it difficult to land, except at the extreme points; an islet and rocks lie off the north-east face of Thornton. At $2\frac{1}{2}$ miles farther to the S.E. is a larger island, named Tsae, with a remarkable fall in the hills near its centre; a small islet lies a mile to the westward of the islets off its north end. The Chusan shore in this locality is shoal-to, there being only $1\frac{1}{2}$ fathom between this islet and the coast.

To the eastward of Tsae island are three islands at the distance of half, $1\frac{1}{4}$, and $3\frac{1}{4}$ miles. The nearest, named Meih-yun, the largest of the three, has a patch of rocks lying N.N.W. 4 cables from its north point. Meihting, the central islet, has a pinnacle rock lying E. by N. half a mile from it, and a rocky patch at 2 cables to the westward of its north extreme. The outer islet, Jow rock, is a narrow cliff with a rock lying a cable's length from its north side.

From Tsae island to Whang head the distance is $4\frac{1}{4}$ miles; half way between the two is a low island, named Ta-chen, and the depth of water in its vicinity is 3 fathoms. A reef lies three-quarters of a mile to the south-east of Ta-chen, and a quarter of a mile from the Chusan shore, with the north-east point of Ta-chen in one with north-east point of Tsae island N.N.W., and the north end of the Putu group E. by N.

The north-west and west face of Putu island is shoal-to, leaving, however, a channel between it and Whang head nearly a mile wide. The northern part of this channel has only 4 fathoms in it, and in working through, when southward of Whang head, do not bring the head to the eastward of North, as the Chusan shore is shoal.

The channel off the south-east end of Chusan is 2 cables wide, and in the centre of it is a reef with a stone pillar on it. The flat extending towards Putu island has only $1\frac{1}{4}$ fathom on it at low water, and some hard casts; therefore vessels drawing over 12 feet should not attempt this passage, but use the Sarah Galley channel. In working up from the southward, between Loken and Kin-ho island, bear in mind that the shoal water extends $3\frac{1}{4}$ cables from the former, and 6 cables from the latter; the above pillar or beacon in one with a cliff islet to the northward of it, is a good mid-channel mark. After passing westward of the beacon, bring the cliff islet in line with a building on Whang head; this will lead over the flat in the deepest water, and when the south end of Putu bears East it may be steered for.

Chinkeamun 沈家門 Harbour is at the south-east end of Chusan, and carries on a considerable fishery to the eastward of Putu island; about 35 junks, each having from 30 to 35 men, and 250 smaller boats, averaging 5 men each, are employed for this purpose, and the proceeds are carried principally to

Ning-po, the fish being preserved in ice during the summer. The harbour, formed between the island of Lokea and the Chusan shore, is $1\frac{1}{2}$ cable wide, with 4 and 5 fathoms water in it abreast the town. The south-west entrance to the harbour, between Lokea and Maoutze island, has not more than $2\frac{1}{2}$ fathoms in it at low water; the mud extends westerly $4\frac{1}{2}$ cables from the former island, and a rock lies S.S.E. a cable's length from the east end of Maoutze.

H.M.S. *Pylades* anchored between Maoutze and Chusan, in 5 fathoms, the width of the channel being $2\frac{1}{2}$ cables; the high land, 600 feet high on the Chusan side, occasioned the squalls at times to be very violent. H.M.S. *Conway* anchored eastward of Lokea, with Liwan island, which has two rocks off its south end (page 119), bearing West three-quarters of a mile in 5 fathoms at low water.

The distance from Chinkeamun to Ting-hai harbour is $11\frac{1}{2}$ miles. The Shei-luh channel along the southern shore of Chusan has deep water in it, but in some places it is so narrow as to be practicable only for small steam-vessels or boats.

The principal islands bounding the south side of this channel are, (reckoning from the eastward,) Maoutze, Ta-kan, Yin-gar, and Ao-shan. Between Ta-kan and Maoutze there are not more than 6 feet at low water, and the same depth between the two latter; between Ao-shan and Deer island there is a deep water channel, but it is confined by mud banks and obstructed by reefs.

Lan-sow Bay is formed between the islets and rocks off the north-east face of Chusan and the extensive chain of islands running in a W.N.W. direction from Video island. The navigation of the southern part of this bay, from the north-west point of Chusan to Putu island, has been noticed in page 127; the northern part, beginning at Video, will now be described, and also the anchorages which may be useful to a vessel proceeding to Ningpo or Chusan in the northerly monsoon.

The Northern Part of the Chusan Archipelago consists of numerous islands and rocks, extending a considerable distance to the northward of Chusan, and fronting the northern part of Hang-chu bay. All of them are inhabited, with the exception of the Barren isles and Leuconna, and small supplies may be obtained; but the natives, except at Tae-shan island, are in a very miserable condition, owing to the constant visitation of pirates. Many good anchorages will be found among them; the depths on the surrounding banks varying from 5 to 17 fathoms, deepening to 25 and 30 fathoms on the outer part of the bank.

As vessels bound to the Yang-tse kiang pass to the eastward of this archipelago, and as, in the northern monsoon, they endeavour to make the island of Video, if they cannot weather the Barren isles, we shall commence with these latter islands, and then continue the description to the westward.

Video Island, in lat. $30^{\circ} 8' N.$, long. $122^{\circ} 46' E.$, bears E.N.E. 21 miles from the summit of Putu. It is about 500 feet high, nearly square, and has a bold precipitous appearance and a remarkable white cliff, which shows when the island bears N.W. by N.; when first seen from the south-west it appears flat and shelving.

E. by N. $\frac{1}{4}$ N. 5 miles from Video are four rocks, called the Four Sisters; and E. by N. 9 miles from Video are two rocks, named the Brothers. The depth

of water in this vicinity is above 30 fathoms; any cast, therefore, below that depth will, in thick weather, point out that a vessel is among the chain of islands.

Leuconna Island bears N.N.E. $\frac{1}{2}$ E. 18 miles from Video, and when seen from the southward it makes like three abrupt round-topped hummocks.

Beehive Rock, 35 feet high, has a rock awash lying 3 cables to the eastward, and a depth of 14 and 16 fathoms around it. From it, Leuconna bears E. by N. $\frac{1}{2}$ N. 12 $\frac{1}{2}$ miles, and Video S. by E. $\frac{1}{2}$ E. 12 $\frac{1}{2}$ miles.

Barren Isles, three in number, are three-quarters of a mile in extent, east and west, and about 50 feet high, and at 2 cables to the south-eastward of the eastern isle is a reef awash at high water, which appears to reach three-quarters of a mile to the south-east. They lie E. $\frac{1}{2}$ N. 16 miles from East Saddle island, and N.N.E. $\frac{1}{2}$ E. 20 miles from Leuconna, and their position is lat. $30^{\circ} 43'$ N., long. $123^{\circ} 7' 14''$ E.

Fisherman's Group.—From Video island a chain of islands extends W. by N. $\frac{1}{2}$ N. 45 miles, terminating in the Volcano islands facing Hang-chau bay. Between Video and the Fisherman's group, the first islands westward, there is a channel 2 miles wide; but among the Fisherman's group (consisting of four islets and several rocks) vessels ought not to go. Perhaps the best channel through this chain is close to the westward of this group, S.S.W. $\frac{1}{2}$ W. 9 $\frac{1}{2}$ miles from the Beehive. The channels between any of the intervening islands ought not to be attempted, as, from the character of the land, there are, no doubt, many sunken rocks.

Anchorage.—Shelter will be found under Hall island, at 7 miles westward of Fisherman's group; but a vessel had better go on to Keu-shan island, and anchor in Peaked Rock bay to the westward of Eden point, bearing in mind that the head of the bay is shoal. Along the southern side of Keu-shan are several islets and rocks, to which a berth of 2 cables' lengths should be given.

Tae-shan Channel.—The channel between the Doub and Cliffs rocks and the west end of Keu-shan island is $1\frac{1}{2}$ mile wide. From the Cliffs the southern entrance to the Tae-shan channel bears North, and is formed by the islets of Pou-no and Pou-ti to the west, and Fu-ning island, with the Cliff islet south of it, to the east; off the west end of the latter is a reef, covered at high water. N.W. by W. 6 cables from Fu-ning are two low rocks, and the channel between them and Fu-ning is shallow. North, 3 cables from these rocks, is the south point of Chang-tau island, which is not steep-to; but north of the rocks there is a narrow channel, named Chang-tau strait, carrying 5 fathoms.

The Tae-shan channel, formed between Chang-tau 長塗 and Tae-shan islands, is a mile wide. Both shores are shoal-to, and a sunken rock lies S.S.E. 2 cables from the projecting point on the Tae-shan shore. A mile to the N.E. of this point is Gan-su island, which has a double peak on it, and there are two islets on each side; the channel lies between it and Chang-tau, under the north head of which is a low rock. Chang-tau peak rises to the height of 920 feet above the sea over the west side of the island, rendering it one of the most conspicuous objects of the chain.

Tae-shan 岱山 Island is 8 miles long and 5 miles broad, and the third in point of size in the archipelago, is very populous, and carries on an extensive

salt manufactory from sea water. Off the south-east end of the island are nine islets, among which vessels have no business to go. There is a passage close to the eastward of Kwan island; but owing to strong tides and the flaws under the bluff land of this island, vessels had better pass south of it and between Kwan and Kwi-si islands, where there is a channel a mile wide; the mud dries 3 cables from the west end of Kwan.

To the northward of Kwan and Kwi-si islands are three islets; the best channel is between Ning and Kwi-si, after which a vessel can haul up for the Tae-shan shore and anchor in 4 or 5 fathoms off Wou-hou creek, observing that there is a reef which covers at first-quarter flood, lying with the summit of Kwi-si bearing S. by E. $2\frac{1}{2}$ miles, and Ellicott isle W. by S. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles; the north end of Peshan islet in line with the north point of Kwan island bearing E. by S. $\frac{1}{2}$ S., will lead south of it. The mouth of Wou-hou creek bears N.E. 6 miles from the summit of Chang-pih island. The creek is not accessible to large boats at low water. There is another creek near a village farther westward; but with these exceptions the whole face of this side of Tae-shan is difficult of access, in consequence of the mud drying a long way from the shore.

At Tautau point, the west end of Tae-shan, the hills come down to the water's edge, and midway between it and Chang-pih are Miles and Ellicott isles, with 5 and 7 fathoms in their vicinity. The Show islands, one of which is high, lie 6 cables westward of Tautau point; the channel between having 4 fathoms at low water. On the north side of Tae-shan are four islets, which are too small to afford much protection in the North-east monsoon, but during the summer good anchorage will be found off the town near the centre of the island.

Volcano Islands.—The East Volcano, which has four peaks on it and is the largest of the group, lies 6 miles westward of Tautau point, and is 4 miles long north and south. East of its south point is an islet; and between it and the Show islands are two islets lying close together, with steep cliffs, named Becher islets. North $1\frac{1}{2}$ mile from the latter islets are two low rocks.

Anchorage.—Vessels passing between the Show islands and the East Volcano should be careful not to stand too close to the latter, as the water shoals to 2 fathoms at $1\frac{1}{2}$ mile from the shore. East 3 cables from its north point is a half-tide rock.

There are many sunken rocks among the islets off the west face of this group, among which vessels ought not to go; but they will find shelter from northerly winds on the south side of the group, to the northward of a flat rock, lying westward of the south point of East Volcano. The northernmost islet of the group has a reef lying $1\frac{1}{2}$ cable's length to the northward of it.

Tides.—The tides in the vicinity of the Volcano islands will be found to have increased their velocity, the flood setting W.N.W. and the ebb E.S.E. It is high water, full and change, at 11h. 30m. and the rise at springs is 15 feet. In light winds a wide berth should be given to all the islets hereabouts.

Skoad Islet lies $4\frac{1}{2}$ miles to the northward of the Show islands; on its north-west and south-east sides are smaller islets. The depth of water between it and the Rugged islands to the northward varies from 5 to 7 fathoms.

Mariner Reef.—A rock or reef lies directly in the route of vessels running between Tae-shan and Chin-san islands towards Ning-po, on which the brig

To
Ning-po
To
Lsu
Ning
Kwan

Mariner's Hope struck. The reef, is about a third of a mile long in an east and west direction, and 2 cables broad; she had 7 fathoms at her bows, with only 5 feet under her stern at low water. Skoad islet bore S. $\frac{1}{2}$ E., distant 3 miles; south extreme of Chin-san E. $\frac{1}{2}$ S.; large Volcano S.W. westerly; and extremes of Rugged islands from N.N.W. $\frac{1}{4}$ W. to N.N.E. $\frac{1}{4}$ E.*

Chin-san Island, 8 miles long in an east and west direction, lies W. by N. 13 miles from the Beehive rock, and $5\frac{1}{2}$ miles to the north-east of Tae-shan. The channel between the chain of islands extending W.N.W. from the Fisher-man's group and this island is sometimes taken during the northerly monsoon by vessels bound to Ningpo or Chusan, and it appears preferable to that through Lan-sew bay, and clear of danger, with the exception of the Mariner reef just described. There are several small islets lying off the eastern and northern face of Chin-san; the best anchorage in the northerly monsoon is to the westward of the south-eastern islet, between it and Chin-san; and there is also tolerable shelter on the western side of Chin-san off Pennell point.

Saddle Group.—The southern islands of this group, South Saddle and East Saddle, bear W. $\frac{1}{2}$ S. 16 miles from the Barren islets, and N.N.W. 17 miles from Leuconna island. South Saddle island is rugged, the highest part, at the north-east end, rising 680 feet above the sea. A rock, with shows at low water, lies in the bay on the east side of the island, with the highest part of the rocky islet close to the eastern point of the bay in line with a conical hill over the west point of East Saddle island.†

Eight miles to the north-west of South and East Saddle islands is North Saddle island, 780 feet high. Between these is False Saddle island; and S.W. of North Saddle are the Side Saddles, two narrow islets, which will afford shelter, but not as good as that under South and East Saddle islands. North Saddle forms the north end of the Ohusan archipelago, and from it the Amherst rocks at the mouth of the Yang-tse-kiang bear N.W. $\frac{1}{2}$ N. 26 miles, the soundings gradually shoaling from 12 to 6 fathoms. The tides are regular; the flood setting to the N.W. and the ebb to the S.E., it being high water an hour before noon on full and change days, and the rise 14 feet.

Anchorage.—The most convenient anchorage in the northern monsoon amongst the Saddle group is under the East Saddle; and in the event of being caught in a southerly wind, vessels might run through between them, taking care to keep South Saddle close aboard, as there is a patch of 3 fathoms lying in the centre of the channel, and three rocks awash north of it.

Childers Rock, which uncovers at low tides, lies $4\frac{1}{2}$ miles to the southward of East Saddle island, with the Barren islands bearing E.N.E., Leuconna island S.S.E. $\frac{1}{2}$ E., and the summit of Senhouse island W. by N. The lead will give no warning of approach to this danger, the depth being 24 fathoms close to.

Parker Islands.—West 11 miles from South Saddle islands are the Parker islands, of which Raffles is the largest. About 4 miles westward of South Saddle is the Bit rock, not much elevated above high water. At half a mile from the north-east point of Raffles island is a sunken rock. An island with steep cliffs, named Senhouse, lies $1\frac{1}{2}$ mile to the south-east of Raffles; there

* *North China Herald*, Feb. 1857.

† See Plan of South and East Islands of Saddle Group, No. 1,418; scale, m — 2.5 inch.

is a good channel between them, and anchorage will be found on the south side of Raffles in the northerly monsoon.

Brooke island lies a mile to the south-west of Senhouse island; the channel between them should not be used, as the wind is liable to fail under the latter; there is, however, a good passage, 2 miles wide, west of Brooke, between it and the Bonham isles. Off the north-west end of Raffles island, and distant from it $1\frac{1}{2}$ mile, are the Elliot islets, on the south-west side of which H.M.S. *Plover* anchored, and found fair shelter, with the wind blowing hard from the northward. From these islets Gutzlaff island bears W. by N. $\frac{1}{4}$ N., $10\frac{1}{2}$ miles.

Cairnsmore Rock.—This dangerous pinnacle rock, not more than thirty or forty feet in diameter, and on which the ship *Cairnsmore* was wrecked in 1858, rises almost perpendicularly from soundings of 12 fathoms at about $2\frac{1}{2}$ miles eastward of the east end of Raffles island. When examined, the precise depth on the pinnacle could not be ascertained, as the wreck covered it, but there cannot be more than 11 feet over it at low water springs.

The position of the rock is lat. $30^{\circ} 42' 10''$ N., long. $122^{\circ} 34' 40''$ E., and from it the south-east point of Senhouse island bears South; a small rugged rock lying close to the south-east point of Raffles island, and in line with the point, bears S.W. by W. $\frac{1}{4}$ W.; and the northern rock of the group lying off the north part of Chesney island, N.W. by W. $\frac{1}{4}$ W.

Caution.—Vessels navigating the channel between the Saddle group and Raffles island are cautioned for the future to keep well over towards the Saddle islands, to avoid the above danger, as the lead will give no warning when approaching it. In sailing north, when the Bit rock opens south of the South Saddle they will be to the northward of the Cairnsmore; and in sailing south, when the same rock opens north of the South Saddle they will be to the southward.

Rugged Islands lie W.S.W. 15 miles from Raffles, and between them are the Morrison islands, the largest of which is very precipitous. The Rugged group affords shelter in both monsoons, but the tides set through them with considerable velocity. Tayung, the largest and highest of the group, is 660 feet above the sea, and differs from the rest by being round-topped, whereas the others are, as their name denotes, rugged. Under the south side of an islet west of Tayung is Pirate bay, which will afford snug anchorage during the northerly monsoon, and a better shelter than that within the S.W. and N.W. horns of the group. A reef, which generally breaks, lies off the east side of Pirate bay.

The largest island on the north side of this group is Tripoint, remarkable for its triple peak; and east of it is Spire islet, on which is a curious pinnacle.

Hen and Chicks.—N.E. by N. $3\frac{1}{2}$ miles from the N.W. horn of the Rugged islands is an islet with several rocks north-west of it, called the Hen and Chicks.

A shoal, with only 10 feet water over it, has been reported to lie S.W. 7 miles from Gutzlaff island, which would place it E. by N. $\frac{1}{4}$ N. not quite 2 miles from the Hen and Chicks.

Gutzlaff Island, 210 feet above the sea, bears N.E. 12 miles from the N.W. horn of the Rugged islands; a small rock lies off its north side.

when to the northward of it, keep its east extreme touching Trunk point, bearing S. $\frac{1}{2}$ W., and this mark will lead between the Melville rock and Ledge island, and between the Dundas rock and Black rock, rather westward of mid-channel. When clear of the Dundas, keep in mid-channel; and when abreast the south end of Sarah island, steer for the west end of Macclesfield island, which should be rounded rather close, to avoid the Middle Ground, the southern edge of which, in 3 fathoms, is only $2\frac{1}{2}$ cables distant. A rock, covered at high water, lies barely a cable's length from the northern face of Macclesfield.

Through Deer Island Channel.—Ting-hai harbour may also be entered from the eastward, by passing between Deer and Takeu islands, which are $1\frac{1}{2}$ cable apart. The Melville and Dundas rocks will be avoided by keeping Deer island aboard, but it must be borne in mind that neither shore of the channel is steep-to. The Beacon rock, awash at high water, to the north-east of Takeu, may be passed on either side; and from thence steer for the Chusan shore, keeping a cable's length to the eastward of Grave island until the harbour beacon opens north of it, when it can be steered for, passing between it and the Chusan shore, keeping the latter aboard, until Takeu island is shut in by Trumball island.

This passage, although narrower, is superior to the Melville channel, as vessels have the tide in their favour all the way. The principal objection to its use is the liability to flaws of wind under Deer island; but the main point to be guarded against is the flood from the eastern channels carrying them so far westward as not to fetch far enough to the eastward of Grave island. There is convenient anchorage between Trumball and Takeu islands, in 8 and 10 fathoms. A spit extends from the south-east end of Trumball, the 3 fathoms line being 3 cables distant from the shore; the south end of Macclesfield island, open of the summit of Tea island, will lead south of it.

The Channel between Bell Island and Chusan is not recommended, owing to the tides, which attain the rate of 5 knots at springs. Nearly mid-channel is a half-tide rock, named Kwa-fau, with a stone beacon on it; and to the S.W. of the beacon is a 9-foot patch lying with the south end of Kwo-kan, the westernmost of the two islets on the Chusan shore, in line with the south end of Kiddisol island. Neither is the north end of Bell island steep-to; consequently, should a vessel use this passage, the channel between the beacon and the Chusan shore should be preferred to that between the beacon and Bell island.

Kiddisol Island, which has a patch of $2\frac{1}{2}$ fathoms off its south-west end, lies 2 cables to the southward of Yanglo point, the south-west extreme of Chusan, with a deep water channel between, but the eddies are violent at the springs. From hence to Sinkong point, 4 miles to the N.W. by N., the coast line of Chusan is mud, with the exception of a small hillock at the edge of low water.*

Anchorage in 10 and 12 fathoms will be found all along the Chusan shore between Yanglo and Sinkong points; but in standing towards the shore, bear in mind that the water shoals suddenly after 10 fathoms.

Ching-keang Harbour, on the western side of Chusan, and distant 7 miles

* See Chart of Kintang Channel, No 1,770; scale, m = 1 $\frac{1}{2}$ inches.

in a direct line from Ting-hai, is formed by the islands, Wai-toe 外約, Lin 中約, and Lateo 裡約, (i.e. Outer, Middle, and Inner Hook) and Chusan. Upon the islands, and on the point near the entrance, are extensive stone quarries. A white rock lies off the south-west point of Wai-teo, and a mud spit extends from the island nearly to the rock. Between Wai-teo and Chusan the entrance to the channel is 6 cables wide, with 7 and 8 fathoms water in it, forming a snug anchorage, much frequented by the junks as a stopping place, and defended from pirates by a fort. Abreast of Lin the channel is less than a cable wide, with 7 fathoms water. The town stands on the banks of a stream on the Chusan shore, which at high tide is navigable for boats. Here the channel is also less than a cable wide, and the depth from 5 to 4 fathoms.

Steward Rock, 50 feet above the sea, lies in the middle of Blackwall channel, between Chusan and Kintang island. The depths are 45 fathoms in its vicinity, except at 2 cables to the eastward, where there is a rocky patch, on which the least water that has been found is 9 fathoms.

Kintang 金塘 or Silver Island lies between the west end of Chusan and the entrance of the Ning-po river. Near its south-east extreme is a remarkable saddle hill, 1,432 feet high, which, with the Cap rock, forms one of the marks for the Melville rock; there is also another remarkable peak, 1,520 feet high, rising at $1\frac{1}{4}$ mile to the northward of the saddle hill.

Alligator point, the south end of Kintang, has a reef, which covers at half tide, extending 2 cables to the southward; and off Algerine point, the south-east extreme of the island, is an islet, connected at low tide by a mud flat, from which a ledge of rocks extends S.S.E. 2 cables, the south end covering at high water. The eastern face of the island is bold-to, without any anchorage along it.

Ta-outse Harbour.—Off the north end of Kintang there is a group of seven islets, amongst which there is anchorage; and off the north-west end is Taping island, to the southward of which is the small harbour of Ta-outse, which affords good anchorage in 7 to 10 fathoms. The entrance is between Kintang and Ta-outse island, and the channel is barely 2 cables wide. Between Ta-outse and Taping there are not more than 8 feet at low water. Ta-outse harbour is small, but affords good anchorage, and may be recommended as a sanitary station for vessels obliged to make a lengthened stay in the Yung river. Supplies of all kinds can be readily obtained by native boats from Ning-po.

Blackwall Channel.—Tsih-tze 册字 or Blackwall island, which give its name to this channel, is about 6 miles in circumference, and divides the northern entrance into two passages, one between Blackwall island and the north-east end of Kintang, called Blackwall pass, and the other between the four islets on the Chusan shore and Blackwall, named Ku-tsu pass. The southern entrance, between Kiddisol and the south-east end of Kintang, is nearly 5 miles wide, and just within it is the Steward rock described above.

From the anchorage off Sinkong point the distance through the Blackwall pass is 6 miles, and no anchorage will be found until to the northward of Blackwall island near Cliff islet, but this is exposed to northerly winds. This pass is three-quarters of a mile wide, and in it the eddies are so strong that

river Yung, should, after clearing the Bell channel, steer W. by S. for Just-in-the-Way, bearing in mind that the south-east face of that islet is foul, and that a reef extends a cable's length from Insular point, the north extreme of Tygo-san island. As before stated, if the tide should fail, there is fair anchorage to the south-east of Just-in-the-Way. From hence the peak of Tower Hill island in line with Insular point will lead southward of the rocks off Alligator point, after which keep over towards the Kintang shore until well past the Deadman, or until Beacon hill at the east side of the entrance to the river Yung is in line with the citadel W.S.W., which will lead northward of the Blonde rock, and to the southward of the $2\frac{1}{2}$ fathoms patch lying S.E. by S. 6 cables from the north end of Tae-le island.

It will be prudent for a stranger, before entering the river Yung, if unable to obtain a pilot, to examine the entrance in his boat, for the stakes and sunken junks which once blocked the channel between the citadel and Peak islet have been removed, and this may have caused some change in the mud banks and soundings outside.

The Yew islands, as before stated, form three entrances into the Yung river, the easternmost of which is between the islands and Look-out hill on the eastern side of the entrance to the river. The first danger in this channel is the Nemesis rock, which is covered at half flood, and lies E. by N. $\frac{1}{2}$ N. a quarter of a mile from the summit of Ta-yew, the eastern Yew. By keeping Pas-yew, the western Yew, open of the south point of Ta-yew, this danger will be avoided.

Having passed the east point of Ta-yew, keep it and Seaou-yew, the middle Yew, aboard, to avoid the Sesostria rock, with only 8 feet on it, which lies in mid-channel, with Friendly islands (lying 7 miles north-west of Chin-hai) in one with Talung island (a high bluff island beyond it) bearing N.W. $\frac{1}{2}$ W.; Peak islet (a remarkable rock on the east side of the river abreast the citadel) in line with Cone hill bearing S.W. $\frac{1}{2}$ S., will lead westward of it.*

Having cleared the Sesostria, steer so as to pass between half and $1\frac{1}{2}$ cable to the southward of Pas-yew, and then for the point under the citadel, taking care that the tide does not set the vessel over to the eastern bank of the river, where the water shoals, to 2 fathoms at half a mile from the shore.

The Middle entrance, or that between Seaou-yew and Pas-yew, is probably the best of the three. A mud spit extends north-westerly $1\frac{1}{2}$ cable from the west end of Seaou-yew, but it will be avoided by keeping the citadel open westward of the west end of Pas-yew; then steer as before so as to pass to the southward of Pas-yew.

The channel between Pas-yew and Chung or citadel point carries a depth of 2 fathoms at low water, and is the broadest and best for small vessels when the tide has risen sufficiently high for them to enter it; the only danger being the Tiger's Tail rock, which covers at high water, and lies rather more than a cable's length N.W. $\frac{1}{2}$ N. from the summit of Pas-yew, with the south-east foot of the citadel hill in line with Cone peak bearing S.S.W. $\frac{1}{2}$ W. Chung point is steep-to on its east side, and vessels will find good shelter under the fort.

* The merchant barque *Moltan* is said to have struck on a rock, having 9 feet on it and 18 feet close to; when on it, Friendly island was just showing northward of Pas-yew, and the northern extreme of Look-out hill bore East.—*Nautical Magazine*, 1852, page 396.

The Coast from Chin-hai trends in a north-west direction, and is fronted by a mud bank, which dries at low water for nearly three-quarters of a mile from the embankment, and is steep-to. At the distance of 7 miles from Chin-hai, and three-quarters of a mile from the shore, are a group of five islets, named the Friendly islands, inside of which there was shelter in a depth of 3 fathoms at the time of this survey, but the water is said to be shoaling fast. Care must be taken, in rounding the west end of the largest islet, to avoid a spit which extends 3 cables to the S.E. from it.

At 4 miles farther to the N.W. is a high bluff, named Talung island, rising to the height of 920 feet, and forming the southern horn of the Tsien-tang estuary, or Hang-chau bay.

Caution.—From Talung the coast trends to the westward, and for upwards of 30 miles is fronted by a dangerous mud bank, which, at the distance of 8 miles from Talung, dries 7 miles from the shore, and on its edge are some small hillocks. The *Kite* transport was lost upon this bank in 1840—the tide, which here begins to increase its velocity to 6 knots at the springs, turning her over the moment she tailed on it.

Middle Ground.—N. by W. $3\frac{1}{2}$ miles from Tse-le island is a Middle ground, with less than 2 fathoms on it; to avoid which, vessels in proceeding to the northward from the river Yung, must keep over towards the Kintang shore, and if drawing 18 feet water, should not bring Tse-le island to the eastward of South. There is a passage to the southward of this Middle ground for vessels of 15 feet draught, but there are two patches, on which H.M.S. *Contest* grounded, lying in a N.W. direction from Tse-le island, one with 12 feet on it at 9 cables, and the other with only 5 feet, at $2\frac{1}{2}$ miles from the island.

Nanho or North Island, bearing N. $\frac{1}{2}$ W. $14\frac{1}{2}$ miles from Tse-le island, is the largest and easternmost of the first group of islands met with when steering to the northward from Chin-hai; it is flat-topped, 216 feet above the sea, three-quarters of a mile in extent east and west, and cultivated. As the water deepens close around this island to 26 and 32 fathoms, vessels cannot anchor near enough to get shelter, but the holding ground is good. North about half a mile from it is a small rock, which always shows.

West Stork is a small islet lying W. $\frac{1}{4}$ N. $3\frac{1}{2}$ miles from Nanho island, and there are 8 and 9 fathoms water between them.

Seven Sisters or Tsh Tsh mei 七姊妹 lie North 9 miles from Talung island, and although small, will afford shelter from northerly winds. The channel between this group and the dangerous mud bank just described is 4 miles wide, and the depth in it varies from 6 to 2 fathoms, shoaling towards the bank. A reef, which shows at low water, lies N.N.W. half a mile from the western islet of the group.

Se-shan 西山 Islands form three distinct groups. East Se-shan, the easternmost group, lies North 18 miles from Nanho island; the largest islet is about 400 feet high, and has six small islets around it; the middle Se-shan group lies 6 miles to the W.N.W. of East Seshan, and consists of one large and eight smaller islets, the southernmost of which is a small rock, nearly level with the water's edge, lying nearly 4 miles to the southward of the highest; the western

islet, House islet, is an abrupt cliff, with a house on its summit. Neither of these two groups are sufficiently large to afford shelter; but fair anchorage will be found in the neighbourhood of the western group, named West Se-shan, which consists of three islets, and lies W.N.W. 10 miles from the Middle Se-shan.

Chapu Bay, formed on the northern shore of Hang-chau bay, is 9 miles wide, in a N.E. by E. and S.W. by W. direction, and 3 miles deep. The position of the roadstead off the city of Chapu 乍浦 will be readily known by the hills in its vicinity, as well as by the islets which protect the road from the eastward; on the eastern of these islets is a remarkable white house.

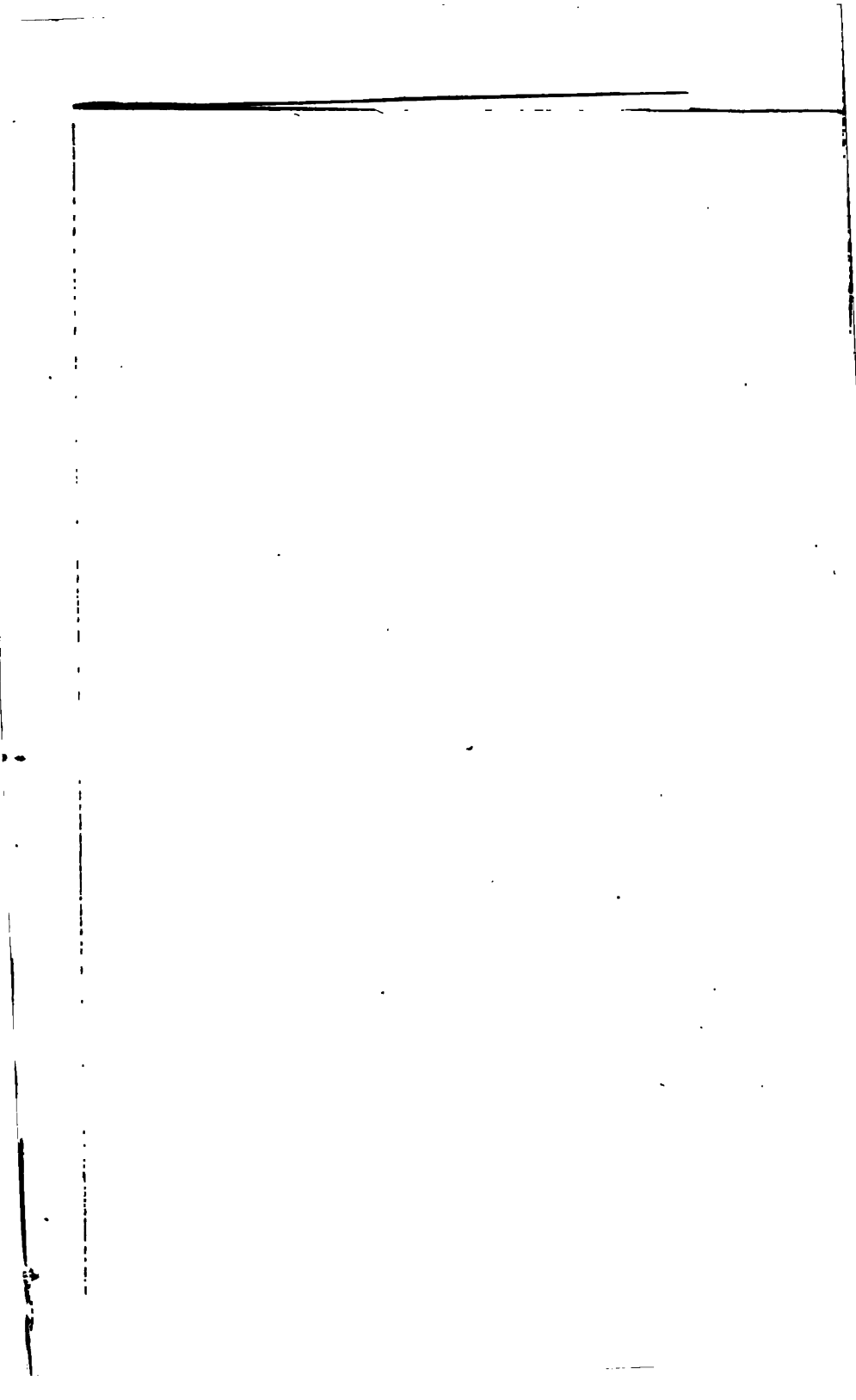
Vessels steering for this anchorage should round the southern islet at about a quarter of a mile, and haul up for the houses which will be seen to the westward of the hills. The anchorage is sheltered from E.N.E. to S.S.W.; but the velocity of the tide at springs is 5 knots, and the rise and fall 25 feet. The mud dries half a mile from high-water mark, is steep-to, and the lead gives no warning. At 4 miles to the southward of the southern islet is a shoal on which the ship *Bentinck* tacked in 3 fathoms, and where there is probably less water; should the tide therefore set vessels in this vicinity, it will be prudent to anchor.*

Off the southern horn of Chapu bay the tide runs $7\frac{1}{2}$ knots, and the rise and fall is 30 feet. In this bight of the bay are some islets and a pagoda. At 13 miles from Chapu there is a bay, protected in some measure by a small islet. On the hill over it was a four-gun battery and a numerous garrison; this place, is the Canfu of Marco Polo. Tseenahan, which is 24 miles westward of Chapu, appeared to be an islet connected with the main by a causeway, under which boats were lying.

Directions.—Vessels bound to the northward from the river Yung should endeavour to leave with the first of the flood; and when northward of Tse-le island, if drawing more than 18 feet, they should not bring that island to the eastward of South to avoid the Middle ground. In working up for the East Se-shan group, some casts of $3\frac{1}{2}$ and 4 fathoms were obtained with the eastern islet bearing N. by E.; it will, therefore, be advisable that a vessel of large draught should not stand into Hang-chau bay, unless bound for Chapu road, in which case pass about 3 miles to the southward of East Se-shan, and steer for the southernmost islet of the Middle Se-shan group. After passing the West Se-shan, the low land on the north side of Hang-chau bay will be seen, and to the southward the Fog islets, a group of five low rocky islets bearing W. by S. $\frac{1}{2}$ S. 14 miles from the Middle Se-shan, the depth of water about them being 5 and 6 fathoms. The position of Chapu road will be readily known by the hills in its vicinity.

If bound for the Yang-tse kiang, keep to the eastward of the Se-shan islands, steering between the East Se-shan and Rugged islands. The tides in the vicinity of the Volcano islands will be found to have increased their velocity, the flood setting W.N.W. and the ebb E.S.E. The Rugged islands afford shelter in both monsoons, but the tides set through them with considerable velocity. From the Rugged islands, steer to pass on either side of the Hen and

* See Plan of Chapu Road, No. 1458; scale, m = 2 inches.



ward by the rocks just described and the southern edge of the Tung-sha banks, and to the southward by the extensive mud bank which fronts the shore to the northward of Cape Yang-tse. The following are the positions of the light-vessel, buoys, and beacons, March 1857 :—

The Light-vessel, painted *red*, with two masts, each surmounted with a ball, at the entrance of the Yang-tse, is moored in $4\frac{1}{2}$ fathoms at low water, one mile from the southern edge of the Tungsha banks, and N. by W. $\frac{1}{2}$ W. 23 miles from Gutzlaff island. A gun is fired from her to attract attention, when a ship is observed running into danger, and the signal, by Marryat's code, of the course that should be steered, is then exhibited. A light from a common lantern is shown on board from sunset to sunrise.

Pilots.—Competent pilots will be found cruising in the neighbourhood of the Saddle islands during the summer months, and just outside Gutzlaff island in the winter. No sailing directions can do away with their usefulness to the stranger, where the safety of the vessel depends so much upon a correct knowledge of the tides. The signal of the authorized pilots is a flag, half red and half white horizontal, with the number of the boat in black.

Kiu-t'ao Beacon Tower (a plain structure of brick, painted *red* and *white*, and 70 feet high) is erected on the southern shore of the Yang-tse kiang, at Kiu-t'ao, near a spot known as the Three Trees. It bears from the light-vessel N.W. by W. $\frac{1}{2}$ W., distant about 16 miles, and from the trees upon Blockhouse island S. by E. $\frac{1}{2}$ E. 8 miles.

Buoys.—The following eight iron Nun buoys are moored between Gutzlaff island and Wusung, upon the most projecting points of the southern edge of the Tungsha bank, and upon the northern projecting points of the south shore bank :—

Fairway Buoy (black and white horizontal stripes, and surmounted with *staff* and *vane*) lies in $4\frac{1}{2}$ fathoms, at the entrance of the river, with Gutzlaff island bearing S. by E. 18 miles, and the light-vessel N.W. $\frac{1}{2}$ W. $7\frac{1}{2}$ miles.

Buoys on South Shore Bank.—The edge of this sand is marked by *three* buoys coloured *black*, each surmounted with *staff* and *vane*, and numbered respectively 1, 3, and 5.

No. 1 is in 18 feet at low-water springs, with Kiu-t'ao beacon tower bearing N.W. by W. ; light-vessel East $3\frac{1}{2}$ miles; buoy No. 3 N.W. $\frac{1}{2}$ W. $8\frac{1}{2}$ miles; and *red* buoy No. 2 on southern edge of the Tungsha banks, N. by W. $3\frac{1}{2}$ miles.

No. 3 is in 18 feet on the edge of the bank extending south-east of the beacon tower, with the tower bearing W. by N. $\frac{1}{2}$ N. westerly; light-vessel S.E. by E. $\frac{1}{2}$ E.; and *red* buoy No. 4 on southern edge of Tungsha banks N. by W. $2\frac{1}{2}$ miles.

No. 5 is in 20 feet, with Blockhouse island bearing N. by E. $\frac{1}{2}$ E.; the beacon tower S.E. $\frac{1}{2}$ S.; and *red* buoy No. 6 on southern edge of the Tungsha banks N.E. $1\frac{1}{2}$ mile. At about a ship's length to the S.S.W. of this buoy the depth is only 2 fathoms.

Buoys on Tungsha Banks.—The edge of this sand is marked by *three* buoys coloured *red*, each surmounted with *staff* and *vane*, and numbered respectively 2, 4, and 6.

No. 2 is in 19 feet at low-water springs, with the light-vessel bearing S.E. $\frac{1}{2}$ E. $5\frac{1}{2}$ miles; Kiut'oan beacon tower W. by N. $\frac{1}{2}$ N.; and *black* buoy No. 1 S. by E. $3\frac{1}{2}$ miles. It shoals suddenly inside the buoy, and the nearest point of the sand, which is dry at low water, bears N. $\frac{1}{2}$ W., distant about one cable's length.

No. 4 is in 20 feet, with the beacon tower bearing S.W. by W. $\frac{3}{4}$ W. $3\frac{1}{2}$ miles Blockhouse island N.W. $\frac{1}{2}$ N.; and *black* buoy No. 3 S. by E. $\frac{1}{2}$ E. $2\frac{1}{2}$ miles.

No. 6 is in 19 feet, with Blockhouse bearing North 2 miles; the beacon tower S. by E. $\frac{1}{2}$ E.; and *black* buoy No. 5 S.W. $1\frac{1}{2}$ miles.

The numbers of the buoys begin from seaward, and in entering the river, when within the Fairway buoy, leave the *red* buoys on the starboard hand, and the *black* buoys on the port hand. When standing towards *black* buoy No. 5, tack the first shoal cast, for the bank is steep-to; close outside the buoy the depth is 5 fathoms.

Anchorage.—It will be generally safe to anchor in 4 to 6 fathoms water off the entrance of the Yang-tse kiang, outside Gutzlaff island. It is recommended that a vessel should not anchor at night under the Saddle islands, during the North-east monsoon, unless there are appearances of bad weather, as it will frequently take all the daylight of the next day to work up to the entrance. In the summer season, if bad weather is approaching, which the barometer usually foretells, a stranger should not attempt to run in, unless certain of getting within the bar; but an anchorage should be sought either under these islands, or the vessel kept at sea, as it is dangerous to enter the river when a gale is coming on. It will be preferable to anchor than to stand out to sea, as the weather is sometimes thick and foggy, the tides strong and uncertain, and the vessel's position may not be quickly ascertained.

Tides.—It is high water, full and change, in the vicinity, and eastward of Gutzlaff island, between 11 and 12 o'clock; and the rise at springs is about 15 feet.

At the entrance of the Yang-tse kiang, it is high water at about noon; springs rise 15 feet, neaps 10 feet, and neaps range 5 feet; its rate, which is from $1\frac{1}{4}$ to $4\frac{1}{4}$ knots, and its direction, is affected by the prevailing wind. At the entrance of Wusung river, it is high water at 1h. 30m., and the rise is about the same. The depth on the outer bar of Wusung at lowest springs is 16 feet, and on the bar above Wusung about 12 feet. At Shanghai it is high water at 1h. 40m.; springs rise 10 feet, neaps 7 feet, and neaps range 4 feet. Vessels drawing 16 and 17, and even 18 feet, can cross the Inner bar at any high water; if of larger draught, they must wait for spring tides. The greatest draught ever brought up to Shanghai was between 21 and 22 feet, but a vessel of that draught will have to wait for the springs to pass either up or down the river.

From the Saddle islands to Wusung the streams generally set N.W. by W. and S.E. by E. when fully made, if north-east gales or heavy rains do not interfere. The flood makes first to the southward, then S.W., and gradually round to N.W. at half flood, which is its direction at the strength of the tide.

The first of the ebb sets to the northward, over the Tungsha banks, and in like manner changes round to the eastward, gradually running the strongest when S.E.

During the survey of the Yang-tse in October 1842, off the mouth of the river, with Sha-wei-shan island bearing N.E. by E., on the first day of the moon the ebb ran to the S.E. 20 miles on the whole tide; the flood, commencing at N.N.W., then W.N.W., afterwards N.W., ran only 10 miles. On the following tide the amount of ebb amounted to 21 miles, and the flood to 16 miles.

It is at the turn of both streams that most caution is necessary to avoid being set out of the channel. Round the south-east edges of the south bank the flood sets W.S.W., and the ebb the contrary way. Leaving the position off Gutzlaff, at a quarter ebb, a sailing vessel will carry the flood to Wusung, if there is any wind.

Directions. — Vessels bound to the Yang-tse kiang from the southward, and not intending to call at Chusan or the river Yung, should pass eastward of Chusan, and enter the archipelago to the northward of that island. In the northerly monsoon they should endeavour to make the Saddle islands, as being the most weatherly land-fall; but if they cannot fetch so far to the northward, and they have reached the parallel of 30° N., the high domed-shaped island of Video, 500 feet high, will then be a conspicuous object, for it may be seen in clear weather 50 or 60 miles; it has a remarkable white cliff, which shows when the island bears N.W. by N., and in thick weather any east below 30 fathoms will point out that the vessel is in its vicinity. The most remarkable land to the southward of Video is the island of Chukea, on which there is a round-topped peak, 1,164 feet high. There are several islets to the eastward of Chukea; Tongting, the outer one, is about 40 feet high, with detached reefs to the south-west of it.

If unable to turn to windward, anchorage will be found on the southern side of Ousha island, in the entrance to the Sarah Galley channel. If able to weather the north end of Chukea, the south side of Putu island will be found the best stopping place; the anchorage in 12 fathoms is under the hill, with three chimneys on it; the mud bank from the shore is very steep, shoaling quickly from 12 to 2 fathoms. From this position, in a handy vessel, the best route will be through Lansew bay, and through the channel between Lansew and Tae-shan islands; but large vessels had better pass eastward of Video, and enter the archipelago farther to the northward. If unable to fetch to windward of the Barren islands, a convenient anchorage can be found among the Saddle group, should the tide or weather be unfavourable for entering the river.

During the South-west monsoon, endeavour to make the island of Video. If late in the day, an anchorage may be sought under the Saddle islands, which afford shelter in both monsoons; and it may here be noticed, that as the entrance of the Yang-tse kiang is somewhat difficult for a stranger to make in fine weather, no vessel should attempt it in bad, without a good departure either from Gutzlaff island or the Amherst rocks, and strict attention to the course and distance made good.

Leaving the Saddle island, keep North Saddle bearing about S.E. by E. until Gutzlaff island bears South, distant 15 to 16 miles, recollecting that, if Sha-wei-shan island shows plainer than Gutzlaff, the vessel is too far to the northward, and in danger of entering the false channel to the northward of the Tungsha banks. Gutzlaff island, 210 feet high, when first seen, will appear

like a small round lump. Sha-wei-shan island, which is a little larger than Gutzlaff, and 196 feet high, is not often seen when a vessel is in the right position for approaching the Tungsha banks. Thus far the tide sets N.W. by W. and S.E. by E. from $1\frac{1}{2}$ to $3\frac{1}{2}$ knots; but it is affected greatly, both in direction and velocity, by the prevailing wind.

With Gutzlaff island on the above bearing and distance, if a clear day, the light-vessel will be seen, when steer for her to cross the bar, passing her as most convenient, taking care, however, not to bring her westward of W.N.W. when eastward of her, nor southward of S.E. by E. $\frac{1}{4}$ E. when westward of her, and to make due allowance for the set of the tides over the Tungsha banks.

From the light-vessel steer about N.W. by W.; when about dipping her hull, the Beacon tower at Kiu-t'aoan will be seen, and when it bears about W.S.W. the vessel will be in 6 fathoms at low water, with the south shore plain in sight. Continue the above course, passing the Beacon tower at about 2 miles, when the dry north bank will in all probability be visible on the starboard hand, as it is only covered at the highest springs. Blockhouse island* will soon rise, having at first the appearance of a cluster of fishing-boats, and gradually showing itself a low island, covered with bushy trees. When the large house on this island bears N.E. by E., the vessel will be in the narrowest part of the channel, which here is only $1\frac{1}{2}$ mile wide.

After passing Blockhouse, the south shore should be gradually closed to about a mile, and kept at that distance until the marks and buoy for Wusung spit are seen. As the south shore bank is steep-to, that shore should not be approached nearer than three-quarters of a mile. The second clump of large bushy trees on the low point, open half a point of the square and well-defined outer point of Pausan, will lead clear of the Wusung spit, if the buoy should at any time be removed.

Great attention must be paid to the set of the tidal streams at the entrance of the Yang-tse, and also to the lead. So long as the weather is clear, Gutzlaff island forms an admirable mark, and it has only to be kept to the westward of South until it is distant 16 miles, when a vessel may steer N.W. by W. for the Fairway buoy or the light-vessel; but in thick weather and a working breeze, with a variable tide under her lee, it is difficult to ascertain when 16 miles have been made, and she will be liable to be horsed over to the Tungsha banks, where several vessels have been wrecked. These banks should always be approached with caution, as their southern edge gives no warning, unless it is by the lead indicating hard bottom; and, as the tide sets across and not into the river, it will be as well to ascertain the vessel's true rate over the ground by using the deep-sea-lead instead of the log-ship, and taking the opposite to the bearing of the line as the course. The break on the head of the Tungsha banks will sometimes be seen after passing the Ariadne rock, but in thick weather the southern side of the channel is no doubt the one to border on. Should the lead indicate hard bottom, and there be much sand amongst the mud on the arming of the lead, the probability is that the vessel is on the north shore.

* Blockhouse and Bush Island have much increased in size since 1842. There are many places where the water has shoaled since the last survey: there is a patch with $7\frac{1}{2}$ fathoms on it at half flood, with Gutzlaff bearing S. by E. $13\frac{1}{4}$ miles.—George B. F. Swain, Acting Master, H.M.S. *Pilot*, 1850.

In working up from the Saddle islands, do not bring Gutzlaff to the eastward of South, until 15 or 16 miles to the northward of it, when it may be brought to bear S.S.E. The vessel will then be on the edge of the south bank. She may now stand to the westward, nearly into her own draught, bearing in mind that the flood sets W.S.W. round the south-east edge of it, and the ebb contrary. All vessels should keep as near as possible to this bank, and not wait for a shoal cast to tack, when standing to the north-eastward.

After passing the light-vessel, do not, when standing to the northward, bring her to the southward of S.E. by E. $\frac{1}{2}$ E., and tack in $3\frac{1}{4}$ fathoms when standing towards the south bank. The deepest water is near and along the southern edge of the north bank, but in standing towards it do not wait for the second shoal cast to go about. Generally the edge of the north bank is lined with heavy fishing-stakes, planted in 4 and 5 fathoms, with only a few feet water a ship's length inside them. As before stated, when standing towards black buoy No. 5, tack the first shoal cast, for the bank is steep-to.

The foregoing directions are for vessels of about 18 feet draught; small craft may close with the south bank when Gutzlaff island bears South, distant between 12 and 15 miles, and steer up with the lead for their guide. The south shore is not to be depended upon all the way; after passing the Beacon tower the bank is steep-to, and should not be approached within three-quarters of a mile.

Directions for Wusung River.—The north spit at entrance to this river is marked by a red buoy, surmounted with staff and vane, and numbered 8. It lies in 17 feet at low-water springs, with Paushan point bearing N.W. by W. $\frac{1}{2}$ W.; leading marks into Wusung river S.W. $\frac{1}{4}$ W., and mud fort S. by W. Wly.

Three poles, each 60 feet high, stand on the inner angle of the stone fortification (Fort A. on the chart) on the left bank of the Wusung river, and are used as leading marks for entering. The two rear poles have crows' nests built around them, and are painted red. The pole in front has on its summit a bull's eye or target, and is painted white.

It would be imprudent for a stranger to enter the Wusung river without a pilot, who is always in attendance at the entrance, for the banks within are constantly undergoing changes from the alluvial deposits. In approaching the entrance, a peaked tower, near the town of Paushan, will be seen to the westward; and on the embankment, in front of it, a beacon, which must be kept a little open southward of the tower until the leading mark for entering the river is on, viz., the white pole kept in one, or a little open southward of the southernmost or inner red pole. In entering, pass close to the eastward of the red buoy, which marks the north spit; the deep-water channel here is narrow, and the spit is composed of hard substances. After passing the poles, keep the western shore aboard. On the opposite shore, a little higher up the river than the town of Wusung, a sharp point—Pheasant point—just out, off which there is shoal water, while on the Wusung side the water is deep, especially at the elbow of the river.*

* See Chart of Wusung river, surveyed by Commander J. Ward in 1858, No. 1,601; scale, m — 3 inches. The directions from the Outer bar to Shanghai, are by Captain Sir F. Nicolson, H.M.S. *Pique*, April 1858.

Above this elbow, but near the eastern shore, is the Inner bar, from which a shoal extends about 3 miles up the river. This shoal, known as the Middle ground, is rapidly increasing in height, and will soon form an island; a great portion of it is visible at half tide. Between it and the eastern bank of the river is the narrow ship-channel leading to Shanghai.

The inner bar is marked by two boats, painted *white* and *red*, which carry a flag and ball of corresponding colour by day, and a light of the same colour (*white* and *red*) at night; the red light is very faint. The white boat lies in 14 feet at low-water springs, on the western extremity of a shoal spit extending from the eastern shore. The red boat is in 12 feet on the northern extremity of the Middle ground.

To cross the Inner bar, pass close to the southward of the white boat; then after keeping well to the northward of the red boat, steer boldly towards the eastern shore until within two or three ships' lengths of it. After the Inner bar is crossed, steer close along this shore, to avoid the Middle ground, until the junk anchorage is reached. The vessel will then be above the Middle ground, and about a mile below Black point, which juts out from the eastern shore, and has trees and houses on it. There is deep water near this point, and generally along the eastern shore, which should be kept aboard until the foreign flags at Shanghai are seen. Then edge over to the opposite shore steering for the British consulate, easily distinguished as the most northerly large building.

As vessels of large draught are obliged to cross the Inner bar while the flood tide is running strongly, care must be taken to sheer over towards the white boat in good time. This caution applies with peculiar force to sailing vessels, for the flood sweeps up the river and towards the Middle ground with great strength. If intending to wait for high water, be careful not to anchor too near the bar. If the vessel is of large draught, it will be better to anchor below Wusung, so as to give plenty of time and room to swing the ship, for with a strong flood a vessel may be abreast the bar before her head is the right way. No vessels of any size should attempt to pass through the junks or across the bar in light winds if the tide is running strongly; and it should be borne in mind that both flood and ebb streams continue to run for some time after the time of high and low water on the shore.

As the bar boats are not unlikely to be drifted away, and may perhaps be entirely removed, the following directions may be useful to a stranger in crossing the Inner bar:—

After passing Pheasant point, to which a good berth should be given, steer across for the second creek on the eastern bank above this point. There is a wooden bridge across this creek, about 150 yards inshore from the bank of the river. By keeping this bridge in sight, and the mouth of the creek open, the bar will be crossed in the deepest water; then proceed as before.

WUSUNG TO HANKAU.

Until re-surveyed and buoyed, and local pilots established, the Yang-tse kiang, above the red buoy at the entrance of Wusung river, must be navigated with extreme caution; the constant accumulation of a very fine kind of sand having created banks, where, at the period of the last survey in 1842, deep water existed, and shoals, which then were at all times covered, are now, from the increase of alluvial deposits, at low water in many places exposed to view.*

Blonde Shoal, which in 1842 had $2\frac{1}{2}$ fathoms on it, and a knoll marked to the S.S.W. of it, appear to have formed a junction, and the bank made by them now shows at low water in several spots.

In November 1858, *Retribution*, *Furious*, *Cruizer*, *Dove*, and *Lee*, passed to the westward of this bank, but at low water not more than 15 or 16 feet will be found in the channel. The *Retribution*, drawing nearly 20 feet, had to wait until half-flood, and then had but six inches to spare.

West Blonde Channel.—This channel was chosen in preference to the one on the eastern side of the above bank, merely from its having been examined and partially buoyed; want of time preventing the examination of the other, which will be found to be the deeper, straighter, and more desirable channel of the two. The course from the red buoy off Wusung to the entrance of West Blonde channel is N.W. $\frac{1}{4}$ W., about 7 miles; when that distance has been run, it will be prudent, if drawing not more than 15 feet, to approach the land (a large and rather conspicuous clump of trees bearing South), touching with the lead, in from $3\frac{1}{2}$ to 4 fathoms on the edge of the bank off the shore of the mainland, it being less abrupt, and affording more warning, than the edges of the Blonde shoal, or rather bank.

As the monotonous embankments of this part of the river afford no landmark that could be recognized from description by a stranger—their height hiding the houses, &c., in the rear—the lead must be mainly depended on. The course through the channel is about N.W.

A quick eye may possibly detect two *small* Joss poles, which occasionally may be visible, through the tops of the trees, over the embankment. If seen, when brought to bear West, a push should be made to the northward, clearing the north end of the Blonde shoal; should the Joss poles not be visible, a boat should be used to sound, and to mark the N.N.W. end of the shoal, clear of which the channel should be crossed steering N.N.E., on which course from 8 to 10 fathoms will be obtained, until the bank extending from Tsung-ming is approached. When in from 5 to 6 fathoms, steer so as to keep on the edge of this bank in that depth, the course being about N.N.W. $\frac{1}{4}$ W.; by this means the Dove's Nest, a very dangerous collection of banks, will be avoided. The *Cruizer* grounded on the 7th November, and the *Furious* on the 9th, on these shoals, from which the following bearings were obtained:—village on Harvey

* See Chart of the Yang-tse kiang, from the sea to Nanking, corrected to October 1859, No 1,480; scale, $m = 0.2$ of an inch.

The description of the navigation of the Yang-tse kiang above Wusung is by Commander J. Ward, R.N.

point N. $\frac{1}{2}$ E.; single tree W. by N. $\frac{1}{2}$ N.; great bush W.N.W.; and left extreme of Mason island N. $\frac{1}{2}$ W.*

The Captain of the steamer *Confucius* reports that there is a good channel close along the main shore; but he acknowledged that his vessel, drawing about 8 feet water, often grounded in it; it was therefore not considered desirable to try that channel until time permitted of its examination.

Harvey Point may be passed at about three-quarters of a mile, and when a conspicuous clump on it bears S.E. by E. $\frac{1}{2}$ E., steer N.W. by W. $\frac{1}{4}$ W. From 6 to 7 $\frac{1}{2}$ fathoms may be expected on this course, until the conspicuous Single tree marked on the chart bears S.S.W. $\frac{1}{2}$ W.; then steer W. by N. $\frac{1}{4}$ N., making due allowance for the tides, which here run N.W. and S.E.

Plover Point may be known by the village on it, and a small fort or breast-work. A number of junks are generally at anchor in a creek opening at this point. When the fort bears S.W., the dangerous banks and shoals known as the Lang-shan crossing may be said to commence.

The fort on Plover point, which is low and will require a good glass to make out, must not be brought to the southward of S.W., until Fu-shan hill, if seen, bears West; then steer for the hill. If the weather be clear, Fu-shan will be made in the shape of a hummock, crowned by trees, and a few white houses; a small fort, like a martello tower, standing on the slope, may also possibly be seen. If unable to get a bearing of Fu-shan, when Lang-shan pagoda, a very conspicuous object situated on the summit of the highest of three hills, bears N.N.W. $\frac{1}{4}$ W., and a white house on left bank of river, if distinguishable, N. 27° E., steer West, until the pagoda bears North, the depth being from 7 to 9 fathoms; then haul more northward, W. by N. $\frac{1}{4}$ N., until Lang-shan pagoda bears N. 13° E., when the course becomes N.W. $\frac{1}{2}$ N. until Lang-shan pagoda bears E. by N.; the course may then be again altered so as to approach closer the left bank of the river, which may now be, for some distance, kept aboard.

Ku-shan Point, which when seen from the south-east is wedge-shaped, the thick end, 90 feet high, being outwards and very conspicuous, should not be approached in passing nearer than 2 $\frac{1}{2}$ to 3 miles.

After passing Ku-shan point, the most anxious and dangerous part of the navigation of the Yang-tse may fairly be said to have been accomplished; in no other portion of the river do we find the same rapid alteration in the bed, especially in the vicinity of Fu-shan and Lang-shan, where the strong tides appear to be actively and constantly engaged in removing some banks, while others are being formed. Until a good local pilotage has been established, vessels, especially sailing vessels, proceeding up, would act wisely by always having a boat ahead, showing the soundings. The time lost in this slow mode of progress is not to be compared with that consumed, exclusive of damage, in heaving a ship off a sand-bank.

Hwang-shan.—After passing the ialets formed and in course of formation abreast Ku-shan point, the river becomes pretty clear, and a mid-channel course may be safely pursued, steering for the high land about Hwang-shan, (which,

* The *Cruiser* kept along the south shore of the river, in 3 $\frac{1}{2}$ and 4 fathoms, and when Harvey point bore North, steered directly for it, by which means she grounded on the south edge of these shoals.—*W. H. D. Strong, Master U. S. Cruiser, 1858.*

from Ku-shan point, looks like an island in the centre of the river,) the lead giving no bottom at 8 fathoms. Anchorage, if required, can be had in Hwang-shan bay, but the water is deep,—12 fathoms close in-shore. The hills in the vicinity range from 250 to 300 feet high. The rise and fall of tide in Hwang-shan bay was from 4 to 6 feet.

Starling Island.—The river narrows to a mile between Hwang-shan bay and Kiang-yin, but immediately afterwards becomes wider. A mid-channel course is still to be steered, following the trend of the river, until approaching Starling island, when the left bank must be neared, and may be kept pretty close (about a quarter of a mile,) passing eastward of the islands.

A dangerous shoal, bearing from Keun-shan or Chu-san pagoda S. 63° E., is forming in the river, and will doubtless before long become an island. It shows at low water, and lies close to the left or eastern bank of the river, with a boat channel inside it.

Chang-sang-chau.—The left bank of the river should still be kept aboard, passing eastward of a long low island. No other banks appear to be forming, until abreast the islet named Chang-sang-chau, where from the right bank a dangerous shoal stretches nearly half way across the river, to avoid which the island of Shau-sha should be kept aboard. The river banks are monotonous between Kiangyin and Keun-shan, the only rising ground, through the whole extent, being Ku-shan hill, on which are some houses.

Tides.—H.M.S. *Styx* experienced a strong ebb all night, when at anchor off Ku-shan point in June 1854, and it was supposed that the flood stream had no existence 10 or 15 miles below this point; this, however, must be considered to refer merely to that period of the year, the river then having a large body of water in it, the downward current would naturally have greater weight, and check the flood stream; but in November 1858 the level of the river was lower, and the influence of the flood was felt much higher; and on 29th December, the level of the water being still lower, the flood stream was sensibly felt as high as Nanking.

Silver Island.—In passing Silver island, the southern channel should be taken, being careful to keep a *mid-channel* course, to avoid the Furious rock, having 14 feet on it, lying about a third of the passage over from Silver island; * and a rock terminating some broken ground which extends from the right bank. A quick helm will be required in passing through, to avoid being at the mercy of the whirling eddies caused by the check these rocks oppose to the stream.

Silver island is evidently destined to form a junction with the small island called Ia-sha. A spit now runs out from the low flat tongue of ground which has accumulated to the north-eastward of the high ground of Silver island towards Ia-sha; while another appears to be working its way from Ia-sha towards Silver island, and the channel between the two is clearly filling up, and the passage has become so narrowed, that it was not deemed prudent to take the *Retribution* through in November 1858.

* The bearings from the *Furious* when aground on the reef extending to the southward, from Silver island were:—Golden island pagoda W. by S. 48°; Keun-shan pagoda E. 48°; and extremes of Silver island from N. E. 4 E. to N. W. by N. At two ship's-lengths to the south-east of the reef there is a rock with only 10 feet water on it.—*Captain S. Osborn, R.N., November 1866.*

Golden Island.—After clearing Silver island, the left bank of the river should be gradually approached, and passing Chin-kiang fu, kept close aboard, to avoid a rock, said to have 10 feet on it, lying nearly in the centre of the river, to the north-west of Golden island; in the vicinity of which island several rocks appear to exist.

Golden island is now connected with the mainland by a low isthmus, well covered with grass.

Pih-sin-chau.—Both channels, north and south of Pih-sin-chau, appear to be safe and clear. In proceeding through the south channel, Pih-sin-chau should be kept aboard; and, after passing it, a mid-channel course steered, until abreast Yen-tse-ki, when the left bank must be closed, in order to avoid an out-lying rock said to exist near the right bank; after passing which, a mid-channel course may be again steered, giving a mud flat, recently formed at the north-west side of Tsau-hia island, a berth. After passing this flat, the river appears to be quite clear.

Nanking.—Theodolite point and the Nanking forts may be approached within pistol-shot. The (two) forts on the right bank of the river are erected on a detached tongue of land in front of the city walls.

Vessels should keep close in to the right bank of the river. After passing Nanking, a mid-channel course may be steered.

Elgin Reach appears to be clear. A mid-channel course may be taken, until the centre of some rising ground, about 150 feet high, and 3 miles S.W. of a remarkable rebel stronghold on left bank of river, bears West; when the right bank should be closed to avoid a spit, running to the north-east of what appears to be a small island.*

Wade Island.—The channel east of Wade island has generally no bottom at 8 fathoms. The channel west of it was used by the U.S.S. *Susquehanna*, and had 8 fathoms in it; both channels may therefore be said to be navigable. The western one is decidedly the preferable of the two, as by using it, some shallow ground $3\frac{1}{2}$ miles W.S.W. of Tai-ping pagoda, and abreast the small village of Tang-tu, will be avoided. Should the eastern channel be used, do not approach the right bank of the river near Tang-tu, but pass close to the south-west end of the small island south of Wade island, as a dangerous shoal stretches out from the village before mentioned; by keeping Tai-ping pagoda nearly touching the south side of the small island, the depth was not less than 17 feet.

The Pillars.—When the river, as in January, may be considered to be at its lowest level, close the left bank to within half a mile, keeping Taiping pagoda as before, and steer a mid-channel course, passing between the East and West pillars, which are two rugged eminences, strongly fortified. From the Pillars the course up the river is southerly. Morton point may be kept close aboard, passing eastward of a small flat island. A rock just showing in November, but dry 6 feet in December, lies on the right bank of the river, 3 miles south of Morton point, and about a cable's length from the shore, and would be covered earlier in the autumn.

* See Chart—The Yang-tse kiang, from Nanking to Tung-hu; and Tung-hu to Han-kau, Nos. 2678, 2695, scales, π = half an inch; surveyed by Commander J. Ward and Officers of H.M.S. *Acton* and *Dove*, November 1858.

Wuhu Reach.—Off the city of Wuhu a shoal lies about a cable's length from the right bank, and dries in December; a mid-channel course clears it, and may be steered with safety through the Wuhu reach, gradually closing the right bank on approaching a range of hills 700 feet high, abreast which are a small islet and some mud patches at about $1\frac{1}{2}$ cable from the shore of the left bank. These mud banks were covered in November, but dry for nearly 2 miles in December. After passing these banks, a mid-channel course may be again followed, passing southward of Barker island, from the north-east point of which Kieu-hien pagoda will be seen.

Kieu-hien.—Good anchorage in from 5 to 8 fathoms was found off this city, which stands on the right bank of the river, about 80 miles above Nanking; some conspicuous hills, ranging from 1,500 to 2,000 feet high, rise some 3 or 4 miles to the southward of it. Some mud banks are accumulating about the south-west end of Barker island. A mid-channel course should be steered, the least water found being $3\frac{1}{2}$ fathoms; this part of the river must be approached with caution. The channel north of Barker island is supposed to be clear, and, if so, would avoid the shoal water before mentioned.

Tides.—From the 24th November 1858, there was a daily rise and fall of 6 inches, but a steady decreasing of the level of the river until the 18th December, when the fall—since the 25th November—had amounted to $8\frac{1}{2}$ feet. From the 18th December, when there commenced a week's constant fall of rain, with fresh N.E. and easterly winds, the river rose gradually 3 or 4 feet, and the vessel swung occasionally to a flood stream. The influence of the flood was sensibly felt off Nanking on the 29th December, and very slightly off Tai-ping and Wuhu.

Osborn Reach is clear. After passing Teih-kiang, keep close to the right bank of the river until clear of Osborn reach, and approaching a large village built on the left bank, cross over, keeping that bank aboard until after passing the village.

Wild Boar Reach.—A mid-channel course may now be steered through Wild Boar reach, which trends to the southward. Some high land will here be seen on the left bank of the river, which was the first rising ground met with on that bank after passing through the Pillar hills, a distance of more than 50 miles. Keep the left bank of the river in view, to prevent being enticed into a wide channel opening in the right bank, and which at first has the appearance of being the main stream; it is about 2 miles to the northward of a walled village which stands on the left bank. On nearing this walled village, close the left bank slightly, to avoid some shallow ground lying abreast it off the right bank; after passing which, Wild Boar reach is quite clear, the course still southerly. After passing a ruined temple, which stands on a very conspicuous bluff, about 100 feet high, edge over to the left bank, to avoid some shallow ground on the right bank, where the channel takes about a W.S.W. course for about 23 miles.

Fitz-Roy Island.—Some shallows lie off the left bank of the river east of Fitz-Roy island, to avoid which keep the right bank aboard until Chichau pagoda bears South; then edge over towards the east part of Fitz-Roy, passing through the channel north of it, keeping pretty close to the left bank, as some mud flats lie on the north side of the island.

After passing Fitz-Roy island the river is again clear, and a mid-channel course may be steered, about S.W. by W. The country about this part of the river is hilly.

Dangerous Shoal.—About 8 miles to the south-west of Fitz-Roy island, and about $1\frac{1}{2}$ cable from the left bank, is a very dangerous shoal, dry in December, but covered a month earlier. To avoid it, pass within a cable's length of a conspicuous rocky islet about 30 feet high, named Tai-tzu-chi, which lies nearly in the centre of the river, and cannot be mistaken.

Lang-kiang-ki.—From thence, until past Lang-kiang-ki, or Hen point, numerous rocks lie in the bed of the river. From Lang-kiang-ki a dangerous cluster extends for more than half way across the river. In November the outer rock was marked by a small bush sunk on it; it was however dry in December. To clear these dangers, keep the left bank of the river aboard, the course becoming again southerly for 5 miles, when steer to the westward through Nganking reach.

Nganking Reach.—Approaching Nganking, keep the left or north bank of the river aboard, and pass close under the walls of the city, $1\frac{1}{2}$ mile, to avoid extensive shoals and mud flats which exist on the other bank. After passing Nganking the river is again clear, steering south-westerly until passing a sandy point, when the course becomes West, keeping on the left bank.

Christmas Island.—After rounding a small islet, called Rover island, the course is again to the southward, gradually approaching Christmas island, the southern point of which should be passed at about $1\frac{1}{2}$ cable, to avoid some mud flats lying on the left bank, and only dry in December.

Tungliu Reach.—Having passed the above flats, a mid-channel course may again be steered, until approaching Tungliu, a third-class city, with rather formidable looking walls, built on the right bank of the river, and abreast which, on the left bank, an extensive flat is in course of formation. It will be advisable to give the point, on which stands Tungliu pagoda, a good berth, as, although shallow water was not obtained there, a great commotion was observed in the stream, apparently caused by some rock, or other check to its even course.

After passing this pagoda, keep on the right bank of the river, thereby avoiding some banks in the centre, dry in December. The squadron, ascending the river in November, crossed over to the left bank, and became entangled among these shoals, the *Furious* grounding on one; they lie abreast three brick-kilns, looking like mounds of earth and stones. In January the *Furious* and *Cruizer* cleared them by keeping close to the right bank, and had deep water. When abreast Hwayuen-chin, where there is a custom-house having flag poles, these dangerous banks will have been passed.

On the right bank of the river there are some high ranges, but the left is flat; and although the river banks were in November and December from 25 to 30 feet high, the country showed evident signs of being frequently inundated; punts were found at most of the farmhouses as far inland as 3 or 4 miles, affording a very significant hint as to the state of the country when the river is at its high level; the left bank, and probably both, would then be covered, the river becoming a large lake; under these circumstances, it would be advisable

to keep in the most rapid part of the current, as it always runs strongest in the deep water.

Bullock Reach.—At Dove point the river takes a sudden bend at right angles to its former trend for a short distance, the course being about W.N.W.; keep the left bank aboard, until entering Bullock reach, when a S.S.W. course is gradually obtained.

Little Orphan.—Near the southern termination of Bullock reach is the Sian-ku shan, or Little Orphan, a most remarkable small rocky islet, rising almost perpendicularly out of the river, and nearly 300 feet high. It has some temples on its summit; and half way up its southern face some houses are perched. In November it was separated by a very narrow belt of water from the left bank, but in December its base was connected to it by mud.

Immediately abreast the Little Orphan a bold rocky head, crowned by forts and look-out houses, rises abruptly to a height of 400 feet. The right bank of the river is still rich in hills, which about here are very rocky and uneven. A mid-channel course may be steered in passing the Little Orphan; no bottom at 9 fathoms was obtained, until nearly abreast Siah-kia-kau, when the left bank was approached, to avoid some shallow sand banks near the opposite shore, the course becoming about West for 5 miles, when still keeping to the left bank, it takes a more southerly direction into Blackney reach.

Blackney Reach.—About half way down this reach is a shallow, apparently extending right across the river, and over which, in December, the greatest depth appeared to be about 14 feet. After passing a village on the north edge of a small creek or stream about a mile, steer S. by W. for a low point, near which are some houses, (Chang-kia-kau,) until the water deepens to 5 fathoms, when the right bank may be followed, gradually deepening the water to 8 and 10 fathoms. Off Becher point a sharp helm will be required, the eddies here being very rapid.

Oliphant Island, lying westward of Becher point, is about $5\frac{1}{2}$ miles long, and divides the river into two branches, which are both shallow. The southern branch was used in November, when $3\frac{1}{2}$ fathoms was the least water obtained; the northern branch was examined, but not approved of, as, although more water was found in it several dangerous banks were sounded on. On 22d December the water had fallen 7 feet since the examination of these channels in the preceding month, consequently it was found necessary for the *Furious* and *Cruizer*, when descending the river, to wait a rise in the river before attempting either channel. They were anchored off Kiu-kiang, and were detained there some days; when the shoals having been carefully buoyed, and a rise of water having fortunately taken place, the north channel was passed.

Opposite Becher point are several sand hills on the right bank of the branch which conducts the tributary waters of the Poyang lake into the main stream. A temple, built on a steep cliff, will also be seen on the same bank.

Seymour Reach.—After passing the west end of Oliphant island, the course is S.W. by W., past Kiu-kiang, which stands on the right bank of the river, and has most imposing looking walls, enclosing desolation and ruin. After entering Seymour reach, the trend of the river is more northerly, and a mid-channel course may be safely steered.

Hunter Island.—In November the channel south of Hunter island was passed through, but much difficulty was met with in getting the *Furious* over a flat extending right across the river, and on which are several sand banks. This shallow ground lies abreast some very conspicuous red cliffs, from 40 to 60 feet high, situated on the right bank of the river. When opposite the west end of these cliffs, cross the river carefully, feeling the way by the lead.

In December the channel north of Hunter island was taken. The *Furious* grounded, but after some hours worked a passage for herself through the mud, and got into a vein of deep water very close to the left bank.

Court Reach.—Steer in mid-channel through Court reach, about W. by S., passing the town of Wu-hiu-tsun, which stands on the left bank. Three miles west of this town some hills, about 600 feet high, occur on the left bank.

Fu-tsz-kau.—Opposite the town of Fu-tsz-kau some shallows are forming in the river. The right bank appears to have most water.

Ke-chau.—The course up the river is now about N.N.W. No shallows appear to exist after passing Fu-tsz-kau until approaching Ke-chau, when a remarkable ruined fort, standing on an isolated rock, must be closed, in order to avoid mud flats lying off the right bank. On passing two small hills about 2 miles below Ke-chau on the right bank of the river, steer for the ruined fort, passing it a hundred yards outside, and the shore at Ke-chau at the same distance; by this means the mud flats which extend some 4 miles parallel to the bank will be avoided.

Ward Reach, which trends about N.N.W. and S.S.E., is now entered, and appears to be quite safe and clear; the left bank of the river was kept aboard by the squadron, and no check whatever was experienced.

Ke-tau, or Cock's Head, may be passed close to. It is a remarkable bluff, rising perpendicularly to a height of 300 feet on the right bank of the river, and cannot be mistaken.

Lee Rock.—A dangerous collection of rocks, on which the *Lee* struck, lie abreast some limestone quarries, at a place called Shih-wuy-ao, on the right bank; in December there were only 6 feet water on them. From Ke-tau steer West, being careful not to approach the right bank until Cock's Head is touching the low point of the opposite shore (left bank), when the Lee rock will have been passed to the northward. The right bank may now be kept aboard, passing close to the densely populated little town of Hwang-shih-kang, when the left bank should be gradually closed, taking the channel east of Collinson island. A small rocky hill, 70 feet high, and about $2\frac{1}{2}$ miles north of Hwang-shih-kang, lies on the left bank, and marks the commencement of this channel; in navigating which, the left bank is to be kept aboard.

Collinson Island.—Off the north end of this island is an extensive flat, extending across the river; 4 fathoms was the deepest water found about mid-channel. A careful lead is the best guide here. The right bank may now be gradually closed, and, passing the small village of Yang-ki, kept close aboard, to avoid a bank on the opposite shore, and which was dry in December.

Paho Reach.—After passing a small ridge of hills, on one of which is a remarkable and conspicuous boulder, cross over to the left bank, to avoid some shallow ground lying off the small village of Tsz-ko-kang; $3\frac{1}{2}$ fathoms was the

most water found at this crossing. On obtaining 5 fathoms on left bank, steer boldly up the Paho reach, passing northward of two rocks, one 18 and the other 10 feet high; the latter lies north of Wu-chang-hien. In the summer these rocks would be covered; to avoid them, keep the left bank aboard.

Bythessa Channel.—After passing Wu-chang-hien, a mid-channel course may be steered, until abreast Hwang-chau pagoda, on the left bank of the river, when edge over towards the Bythessa channel. The squadron ascending and descending the river was compelled to use this channel, there not being sufficient water for the *Furious* in the eastern channel.

The Bythessa channel must be navigated with extreme caution, keeping the right bank aboard; it is so narrow that a vessel touching on either side, and swinging across, would ground on the opposite bank, and have the whole weight of the stream pressing her down. At an earlier period of the year the eastern channel would have plenty of water in it, and, if so, the Bythessa channel should be avoided.

The course now becomes North, and the river clear. Gravener island should be kept aboard, to avoid sand banks on the opposite shore.

Washington Reach.—After passing Gravener island, a sudden bend of the river leads into Washington reach, through which a mid-channel course (about W.S.W.) may be taken; $4\frac{1}{2}$ fathoms was the least water found in this reach in December, and the river was then nearly at its lowest level. The right bank is to be approached on nearing some rising ground about 300 feet high, which lies on that side of the river; from thence the same bank is to be followed, as there appears to be shallow water off the left bank after passing the Pih-hu shan, or West Tiger-hill, a prominent elevation about 400 feet high. The river again takes a northerly course (about N.N.W.), and appears to be clear, and free from any impediments.

Yang-lo, a small town on the left bank, may be approached close to; a ruined temple standing on the spur of a hill, one mile south of Yang-lo, is a conspicuous object.

Pakington Reach.—A mile north of Yang-lo, Pakington reach is entered, the course taking rather a sharp turn to the westward, gradually turning to the southward into Hankau reach.

Hankau Reach trends nearly S.W. and N.E., becoming still more southerly at Hankau. The two last-named reaches are, by keeping on the left bank, free of any impediments. North of a remarkable bluff (200 feet high), called Kin-shan, which is on the right bank of Pakington reach one mile inland, lies a sand bank, which dries in December; it is easily avoided by nearing the left bank.

Opposite Hanyang, just above the entrance to the river Han, lies an extensive mud bank, dry 4 feet in December. A spit, gradually deepening, stretches to the northward from this, and affords good anchorage in from 3 to 7 fathoms.

Hankau.—At Hankau, lat. $30^{\circ} 52' 50''$ N., long. $114^{\circ} 20'$ E., 384 nautical miles above Nanking, the river still maintains the same characteristics, showing no signs whatever of a decrease either in breadth or depth. No bottom at 9 fathoms was obtained.

The cities of Hankau and Hanyang stand on the left bank of the river, and Wuchang the provincial capital on the right bank. Hankau 漢口 means mouth of the Han.

CHAPTER VII.

EAST COAST OF CHINA.—HWANG HAI OR YELLOW SEA ; GULFS OF PE-CHILI AND LIAU-TUNG.

VARIATION $2^{\circ} 0'$ to $3^{\circ} 30'$ West, in 1861.

The **Hwang Hai**, or Yellow Sea, is bounded on the west by the deep bight of the coast formed between the Yang-tse kiang and Shan-tung promontory, and on the east by the coast of Korea. It is mostly muddy, and of a yellow colour near the land, nor has any part of the coast been explored between the Yangtse and the promontory.*

Hwang Ho, or Yellow river, the entrance to which is said to be in lat. $34^{\circ} 2' N.$, long. $119^{\circ} 51' E.$, is almost if not quite closed by its own silt. The whole of the low coast between it and the Yang-tse is fronted by extensive flats and shoal banks, projecting in some places above 60 miles from the land, and rendering the approach dangerous.

Urh Tao 耳島, or Ear island, also called Staunton island, is in about lat. $36^{\circ} 47' N.$, long. $122^{\circ} 16' E.$ It is of middling height, and lies near the south point of the peninsula of Shantung.

Actson Shoal.—A dangerous shoal, lying to the southward of the Shantung promontory, was sounded on by H.M.S. *Actson*. The least depth obtained on it was 22 feet, in lat. $36^{\circ} 31\frac{1}{4}' N.$, long. $122^{\circ} 28' E.$; but less water probably exists.

Approaching the shoal from the southward, the depth gradually decreased from 12 fathoms at 8 miles south of the shoalest part, to 10, 8, 7, and 5 fathoms, and then rather suddenly to 22 feet; it then rapidly deepened to the northward. The land was in sight occasionally through the haze, but not sufficiently distinct to get bearings of its extremes.

Caution.—Until an opportunity offers of ascertaining the dimensions and features of this shoal, vessels approaching its vicinity should keep a careful lead going. It will be prudent not to make the land until nearly on the parallel of the promontory.

Shantung Promontory, in lat. $37^{\circ} 25' N.$, long. $122^{\circ} 45' E.$, and the easternmost land in China, is the eastern extremity of Shantung province. The promontory is high and bold, with a rugged termination near the sea, and has a small pagoda near its end. The soundings are 16 and 18 fathoms about 9 miles from the promontory, but increasing fast to 30 and 40 fathoms, when it is approached within 3 miles.

* See Chart: China, from Hongkong to Liau-tung, No. 1,362; scale, $d = 2$ inches.

About 2 or 3 miles to the north-west of the promontory there is a small but high island, named Alceste; it appeared to have a reef extending about half a mile around it, and there are some rocks above water on the reef. At about 7 miles westward of Alceste there is another round island at some distance from the main land, which here forms a deep curve or bay, and is mountainous.*

Close under the promontory, in about lat. $37^{\circ} 23' N.$, is Sang-kau bay, having in it an island called Le-tau, where the coasting junks anchor; and there is said to be a spacious and deep harbour, surrounded by rocks, with extensive shoals on the left side of the entrance. Another large harbour, called Toa-sik-tau, or Ta-shih-tau 大石頭, frequented by the Chinese junks, is also said to be near the promontory.

Wei-hai-wei 衛海衛 Harbour, at about 25 miles westward of Alceste island, is formed between Leu-cung island, 517 feet high, and a deep bight of the coast, and is the most eastern anchorage on the north shore of the Shantung province. It is easy of access, and has two entrances, one on the west, the other on the east side of Leu-cung island, thus affording a facility for access or departure with almost any wind.

The western entrance, although much narrower than the other, has the deepest water, and should be used by all vessels drawing above 18 feet. The soundings in it are 10 and 12 fathoms, but when abreast Observatory island (a rocky islet near the north-west side of Leu-cung), they increase suddenly to 17 fathoms, and decrease again rapidly to 5 fathoms; after which the depth gradually decreases to the southern shore, and into the bay to the westward where the town is situated.

Round island and three or four adjoining rocks lie off the northern point of the western entrance; the outer rock, scarcely a mile E.N.E. from the point, is 10 or 12 feet high, and steep-to. A rocky patch, which covers at high water, lies between this outer rock and Round island; no other hidden dangers are known.

The best anchorage is close to the west point of Leu-cung island, in 5 to 7 fathoms, on excellent holding ground of mud, the island protecting the anchorage from the north-east. At half a mile E.S.E., from the eastern end of the island, is a reef of rocks, steep-to, but as a portion of them always shows above water, they may be easily avoided. H.M.S. *Acton* anchored in 5 fathoms, with the apex of Leu-cung bearing N.E. by N., small gingall fort N.W. $\frac{1}{4}$ W., left extreme of Observatory island N.N.W., and Channel island, centre, S.E. $\frac{1}{2}$ E. This position is only open $2\frac{1}{2}$ points to the sea, from S.E. by E. $\frac{1}{2}$ E. to E. $\frac{1}{2}$ S., while to the westward the mainland is well overlapped, by Observatory and Leu-cung islands.

The place of observation at Wei-hai-wei was at high water mark at the east end of Observatory island on the north-west side of Leu-cung, and is in lat. $37^{\circ} 30' 19'' N.$, long. $122^{\circ} 07' 00'' E.$; var. $3^{\circ} 41' W.$ in 1860; high water, full and change, at about 9h. 30m.

* See Chart of Yellow Sea and Gulf of Pe-chili, No. 1,256, scale, $d = 3\frac{1}{2}$ inches; corrected to April 1861.

Directions.—When bound to Wei-hai-wei harbour from the eastward, after rounding the Shantung promontory, and giving Alceste island a berth of 2 miles, the course for the Channel islet in the eastern entrance of the harbour is W. $\frac{1}{4}$ N., and the distance from Alceste 21 miles. This will lead about $1\frac{1}{2}$ or 2 miles to the northward of Coast island, and clear of all known dangers, up to Channel islet, a small round rocky islet about 20 feet high, which may be safely approached and passed to a quarter of a mile. Vessels drawing 17 feet and less may pass on either side of this islet, but those of 18 feet should pass to the southward, rounding the islet close to, and steering for the west end of Leu-cung island, anchoring as above in from 5 to 7 fathoms. After passing Channel islet the soundings will decrease to $3\frac{1}{2}$ and 3 fathoms, over an extensive flat, stretching across from Leu-cung to the main shore, but they will increase as the west end of the island is approached.

In working in through the eastern entrance, the lead may be safely trusted, there being no known dangers. The shore of the mainland may be approached to a mile, and that of Leu-cung to 3 cables.

Vessels of large draught running for this harbour from the eastward should pass outside of Leu-cung island. An offing of a mile will clear all danger, and when a small gingall fort, on the mainland, on the west side of the bay, bears W. $\frac{1}{2}$ S. the western entrance will be open. The vessel can then steer for the fort; just to the southward of it is a village, off which a fleet of junks are generally to be seen, and they will assist in showing the position of the fort. The course should be then gradually altered to the southward, and when Observatory island comes on with the left extreme of Leu-cung, steer for the anchorage.

Approaching Wei-hai-wei from the westward, Round island and the adjoining rocks are conspicuous marks for the entrance. The outer rock is steep-to, and its north and east side may be passed at a cable's length. The right extreme of Observatory island should then be steered for until the gingall fort bears W. $\frac{1}{4}$ S., then keep a mid-channel course until Observatory island comes on, as before, with the left extreme of Leu-cung, then steer for the anchorage.

Chi-fau Harbour.—Cape Chi-fau 芝罘, about 60 miles westward of Alceste island, is high and bold, and at a distance appears like an island. Chi-fau harbour is formed by a receding coast-line between White rock and Cape Chi-fau, and is sheltered on the north by the Kung-tung-shan islands. The best anchorage, spacious and sheltered from all winds, is under these islands, in 4 to 5 fathoms.*

There is also anchorage in Village bay, on the south side of the cape, in 2 to $4\frac{1}{2}$ fathoms, but a northerly wind sends in an unpleasant swell, and a sailing vessel, with a south-easterly wind, would find a difficulty in leaving it. The approaches to this harbour, according to our present information, are clear of all danger.

Kung-tung-shan Islands 崆峒山.—This group, as before stated, shelters Chi-fau harbour from the northward. The North rock or island of the

* See Plan of Miau-tau strait and Chi-fau harbour, No. 1,260; scale, $\pi = 0.2$ of an inch; and Plan of Ki-san-sen harbour by Lieut. D. Ross, 1816. Chi-fau is the name of the Cape, and as applied to the harbour, is evidently a misnomer, its proper name being Yen-tai; it is known to the Chinese navigator only by the latter name, and he would probably not know what was meant if asked to be directed to Chi-fau.—*Commander J. Ward, H.M.S. Acteon, 1880.*

group bears E. $\frac{1}{2}$ N., distant $7\frac{1}{2}$ miles from Cape Chi-fau. When approaching it from the eastward it appears round, with a smooth top sloping southward, but when seen from the northward and westward it is wedge-shaped. A small rock, just awash at high water, and therefore nearly always visible, lies N.E. by E. $\frac{1}{2}$ E. 3 cables from the North rock, and is steep-to, there being 9 fathoms close outside it.

Double rock bears from North rock S.W. by W. distant $2\frac{1}{2}$ miles, and seen from the eastward appears, as its name denotes, to be a double island, the northern part like a wedge; the southern part, which is much higher, being about 150 feet, is an irregular mound, rather elongated to the westward.

S.E. island is 60 feet high, and bears from North rock S.W. $\frac{1}{2}$ S. $\frac{1}{2}$ miles. This and the two islets just described are safe of approach, and except the small rock lying off North rock, appear to have no detached dangers. Three high rocks lie between South-east island and Kung-tung, the largest island of the group, but no hidden dangers have as yet been discovered.

A spit, which shows at low water, extends southward and westward from Kung-tung island: its extreme end has 4 fathoms close to, and from it the highest summit of the island bears N.E. $\frac{1}{2}$ N. northerly, distant $1\frac{1}{10}$ mile, and the Mound N.N.W. $\frac{1}{2}$ W. This spit shelters the anchorage from easterly and south-easterly winds.

Directions.—When bound to Chi-fau harbour from Wei-hai-wei, or from the eastward, after rounding Cape Cod and Eddy island, the course and distance to the Kung-tung-shan islands is West 25 miles. The high hill over Knob point, kept on a W. by S. $\frac{1}{2}$ S. bearing, will lead eastward of these islands, giving S.E. island a berth of half a mile. If intending to anchor, this mark must be followed until Stickup rock comes on with the eastern part of the Mound, bearing N.N.W. $\frac{1}{2}$ W. when the end of the spit will have been passed, and the course may be altered for the Mound, until Finger rock, which is conspicuous, comes on with the west extreme of Kung-tung island, N.N.E. $\frac{1}{2}$ E., then haul up more to the eastward, anchoring with the centre of the island bearing about E.N.E. in 4 to $4\frac{1}{2}$ fathoms. The bottom is mud, and good holding ground, and there is room for a large number of vessels.

If wishing to run farther on for the anchorage in Village bay, on the south side of Cape Chi-fau, when the mark for clearing the spit has been reached, Chi-fau peak bearing N.W. will readily be distinguished. Steer N.W. $\frac{1}{2}$ W. for the head of the bay, and anchor in 4 to 5 fathoms, with the extreme of the cape bearing about N.N.E. or N.E. by N.: the bottom here is also mud. H.M.S. *Acton* anchored in $3\frac{1}{2}$ fathoms at low water, with Chi-fau peak bearing N.W. by N.; Sentry rock N.E. by E. $\frac{1}{2}$ E.; the summit of Kung-kung E. by S. $\frac{1}{2}$ S.; and Knob point S.S.E. On the south side of the peninsula, which is connected with the mainland by a low neck of sand, is a village and a small square gingall fort.

In working for this harbour to the eastward of the Kung-tung-shan islands, North rock, Double, and S.E. island may be safely approached to half a mile, on the one side, and the mainland until the soundings decrease to $4\frac{1}{2}$ fathoms on the other; the depth gradually lessens as the shore is approached. Between the islands and Knob point is a mud bank, from a mile to $1\frac{1}{2}$ mile wide, east

and west, having in one or two places 4 fathoms at low water springs, but the general depth is $4\frac{1}{2}$ and $4\frac{1}{2}$ fathoms.

In working towards Village bay, as the spit extending from Kung-tung island is approached, remember the bearing of the hill over Knob point, W. by S. $\frac{1}{2}$ S., and do not go to the northward of that bearing until the clearing mark, Stick-up rock and the Mound, comes on. A longer stretch may then be made on the port tack, taking care, however, not to approach the Mound nearer than to bring S.E. island just in sight to the left of the western part of Kung-tung island, when it will be seen bearing E. $\frac{1}{2}$ S. over the sandy flat between the two portions of the island. This line will clear the west sand spit, the south extreme of which bears from centre of Mound S. by E. $\frac{1}{2}$ E. nearly three-quarters of a mile, and W. $\frac{1}{2}$ N. from centre of Kung-tung.

Approaching the harbour from the westward, Chi-fau peak, which is 980 feet high, and the land in its immediate neighbourhood forming the cape or peninsula, shows out conspicuously, appearing from a distance like an island; the low sandy isthmus connecting it with the mainland not being visible. There are no hidden dangers known at present in the vicinity. Three or four detached rocks are dotted along the shore, but they are all well within half a mile of it, and above water; a course a mile off, and parallel to the shore, clears everything. Sentry rock lies S.S.E. of the cape, and may be rounded at 2 cables' distance in 7 fathoms, and the anchorage under the cape steered for.

If intending to anchor under the Kung-tung-shan islands, after rounding the Sentry rock, steer for Knob point until the clearing mark for the west sand spit (S.E. island touching the left side of the west part of Kung-tung island, bearing E. $\frac{1}{2}$ S.) comes on; then run in on that line, and anchor as before directed.

Tides.—It is high water, full and change, in Chi-fau harbour at 10h., and the rise is about 8 feet.

The Coast westward of Cape Chi-fau falls back to the southward, forming a sandy bay, terminated by a sloping point, bearing N.N. by W. $\frac{1}{2}$ W. from the cape, distant 11 miles. Two small bays are also formed between Sloping and Low points, the latter of which is distinguished by a conspicuous nipple, or small mound upon it, 250 feet high.

Teng-chau 登州.—The course and distance from Cape Chi-fau to the anchorage off Teng-chau is first N.W. by W. 23 miles to abreast of Low point, and then W. $\frac{1}{2}$ N. 10 miles to the anchorage. If intending to anchor off Teng-chau, after rounding Low point, steer W. $\frac{1}{2}$ N. until Spit point, the south extreme of Chang-shan island, comes on with Island head, immediately to the northward of it (on the eastern side of the island,) bearing N. $\frac{1}{2}$ E.; then steer for the town, taking up the anchorage on the same bearing, in 3 to 6 fathoms.

But in running westward, be careful not to bring the nipple on Low point to the eastward of E. by S. $\frac{1}{2}$ S., to avoid a dangerous rocky ledge extending $2\frac{1}{2}$ miles east of Teng-chau head, and nearly a mile off shore. This reef partially protects the anchorage from the eastward, as Teng-chau bank does from the westward, but it is entirely exposed to the northward, and these winds send in a heavy breaking sea, which renders the anchorage unsafe and communication with the shore impossible, the Miau-tau group being too distant to afford any shelter.

The Teng-chau bank projects in a W.N.W. direction $6\frac{1}{2}$ miles from Teng-chau head. A depth of $2\frac{1}{2}$ fathoms was obtained on it at high water, with the head bearing E.S.E., and the west point of Ta-hi shan island N. $\frac{1}{2}$ E. The bank has a general depth of 3 to 4 fathoms on it, but there are some patches of only 3 to 6 feet.

The Miau-tau 廟島 or Meih-shan group, consisting of fifteen islands, exclusive of two or three small rocks, extend in a northerly direction from Teng-chau to within 15 miles of Liau-tie-shan head, (named the Regents Sword by Sir Murray Maxwell in 1816,) and separate the Yellow Sea from the Gulf of Pe-chili. The peak of the northernmost island is in lat. $38^{\circ} 23' 37''$ N., long $120^{\circ} 52'$ E. There are several passages through these islands. Miau-tau strait, between the south part of the group and the mainland, has generally been used by vessels bound into the Gulf of Pe-chili; but if not intending to anchor off Teng-chau, or among the southern islands of the group, there are much better channels north of Chang-shan island.*

The Chang-shan channel, between the north side of Chang-shan and Hou-ki, is decidedly the best, and may be taken at night, if the islands be seen. In fact, with the exception of the Hesper and Fisherman rocks, and a reef extending a mile to the southward from Sha-mo island, the whole of the entrances northward of Chang-shan appear to be remarkably clear of danger. A small rock, which dries 6 feet at low water, lies in mid-channel in the eastern part of the deep narrow passage between North and South Hwang-ching islands, and there is another of the same height lying three-quarters of a mile from the north-east shore of North Hwang-ching.

Besides the rock in mid-channel between North and South Hwang-ching, there is also a reef, with a flat rock on it, extending a quarter of a mile from the north-west point of South Hwang-ching.

The Liau-tie-shan channel, north of the Hwang-ching islands, is the most northern entrance into the gulf. It is supposed to be clear of all hidden dangers, with the exception of a small rock (before mentioned) which dries 6 feet at low water, lying three-quarters of a mile from the north-east side of North Hwang-ching.

Anchorage.—There are two or three good anchorages among the islands forming the southern extreme of the Miau-tau group, but Hope sound is the best, where ships of any draught of water, and in almost any number, may lie quite sheltered from all winds, so that even boat work would be seldom interrupted. The sound is on the west and northern side of Miau-tau or Temple island, and is sheltered on the east by that island and Chang-shan; on the north by Chang-shan and Siau-hi-shan, and some rocks between them; and on the west and south-west by Ta-hi-shan, and a reef extending to the south-east of that island. Having several entrances, even sailing vessels, under all circumstances of wind and tide, may freely run in and out of it. If drawing under 14 feet, they may anchor between Miau-tau and Chang-shan, and if this be too open to the southward, they can anchor south of Chang-shan

* The description of the Miau-tau group, and the Sha-lui-tien banks at the entrance of the Pei-ho, is by Commander J. Ward, H.M.S. *Acton*, in 1860, and from the remark books of H.M.S. *Squadron*, 1840—1860. See Chart of Miau-tau Strait and Islands, No. 1,392, scale, $m = 0\frac{1}{4}$ of an inch.

in 4 to 6 fathoms, sheltered from all but westerly winds. The *Actæon* anchored in $4\frac{1}{2}$ fathoms, with Chang-shan peak bearing N.E. by E. $\frac{1}{2}$ E, the west extreme of Chang-shan N.W. by N., and the temple in the rear of Ten-chau-fu South a little easterly.

There is anchorage in 6 to 9 fathoms in Chief bay on the south side of To-ki island; it is well protected from the northward and westward, but quite open to southerly winds.

H.M.S. *Wellesley* anchored in 12 fathoms under Kao-shan or Quoin island during a strong northerly wind, with the island bearing from North to N.N.E. $\frac{1}{2}$ E. about a mile distant.

Ta-chu Shan 大竹山, or Great Bamboo island, the easternmost of the Miau-tau group, is 480 feet high, and can be seen at a distance of 30 miles. The island has a white shingly beach around it, and appears bold-to.

Chang-shan 長山, or Long island, the largest of the Miau-tau group, has a sandy spit named Chang-shan Tail, extending South a long half mile from Spit point, its south extreme, with irregular soundings of $4\frac{1}{2}$ and 2 fathoms to the southward, the latter depth being nearly $1\frac{1}{2}$ mile from the point. The Tail shows at low water; a tidal overfall is very perceptible on it, and continues so for a considerable distance across the strait, like breakers far to the southward of real danger. H.M.S. *Furious*, April 1858, grounded at $1\frac{1}{2}$ mile from Spit point, with the east extreme of Chang-shan just shutting in with the south extreme, bearing N. $\frac{1}{2}$ E.; and the western end of Ta-hi shan island N.W. by W. As night was approaching, there was no time for examining the shoal, but the vessel appeared to have grounded on its southern limit, having $2\frac{1}{2}$ fathoms at her bows and amidships, and 5 fathoms under her stern.

A small round hill, with a heap of stones on it, forming the extreme of the land to the north-eastward of the village on Miau-tau island, kept open of Ship point (a low bluff of a reddish colour, forming the western extreme of the southern part of Chang-shan), N.N.W. $\frac{1}{2}$ W. will lead in 5 fathoms water to the south-west of the spit. The above hill is low, and to the north-east of the village is a higher hill, having also a heap of stones on its summit.

Ta Hi-shan 大黑山, and **Siau Hi-shan 小黑山**, or Great and Little Black islands, lie to the westward of Chang-shan, and between them is a small island, named Miau-tau or Temple island, 310 feet high. Hope sound, on the north-west side of Temple island, as before stated, is the best and most sheltered anchorage among the Miau-tau group.

To-ki Island 陀幾, about 10 miles to the northward of Chang-shan, may be readily distinguished by its peak, 613 feet high, and is in the form of a right angle triangle, the shortest sides facing the south and west. There are four villages upon the southern side of the island, and one or two on the north-east side. The whole of the southern part of To-ki appears clear of danger. The small rock off its south-eastern point, and Mochang-shi islet off its south-west end may be passed at a cable's length.

Kao-shan is a remarkable little island, lying nearly 5 miles W.S.W. of To-ki. Its form is like a gunner's quoin, with the highest part (650 feet high) to

the southward. The island to the southward, named Hou-ki 侯鷄, 310 feet high, has a reef extending some little distance from its northern side, and another off its eastern end.

Nimrod Rock.—H.M.S. *Nimrod*, June 1859, whilst steering for the passage between To-ki and Kao-shan, passed a small rock just above water. The following bearings were taken when abreast the rock:—North extreme of To-ki, N.W. $\frac{1}{4}$ W., the rock in line with the eastern extreme of Hwang-chin island, N. by E. $\frac{1}{4}$ E.; and the rock in line with the eastern extreme of Ta-kin island, N. $\frac{1}{4}$ W. This rock is probably identical with the Hesper; for in Commander Ward's survey there is nothing less than 9 fathoms in the position assigned to it.

Hesper Rock.—This danger was discovered by J. Loane, Master, R.N., commanding H.M.S. *Hesper*, when endeavouring to find the Nimrod rock. It dries from 4 to 6 feet at low water springs, and is scarcely covered at neaps; in fact at the highest tides a break or mostly a ripple, visible in daylight and clear weather, shows its position. From the rock the west extreme of Ta-kin island, which is 590 feet high, bears N.N.W. $\frac{1}{4}$ W.; the summit of Kao-shan (which is conspicuous and quoin-shaped), W. $\frac{1}{4}$ N.; and the highest part of Ta-chu-san, 480 feet high, S. by E. The rock is only about 30 yards in extent, east and west, and 8 or 10 yards wide, and when first seen, bearing E. $\frac{1}{2}$ N., it had the appearance of a wreck or abandoned vessel, with her timbers showing above water. Great caution should be used in approaching this locality at high water.

The *Hesper* passed the south and south-east sides of the rock at the distance of 3 cables, and carried 12 fathoms water. When it bore N. $\frac{1}{4}$ E. it was in line with the east end of Hwang-ching, and when W.N.W. it was in line with the north side of To-ki; attention to these two bearings will lead either eastward or southward of it.

Fisherman Rock is nearly in the middle of the channel between To-ki and Ta-kin islands, and is seldom visible, being only just awash at low water spring tides. A ripple generally shows its position during both flood and ebb streams when the sea is smooth, but when either stream has ceased, no signs of it appear. From the rock, the east extreme of Ta-kin island appears just touching the west extreme of North Hwang-ching island, N.N.E. $\frac{1}{4}$ E.; Quoin island is just seen over the north extreme of To-ki, S.W. by W.; and the western side of Sha-mo island is in line with the centre of Siau Chu-shan, S. by E., easterly.

Directions.—Vessels bound through Miao-tau strait from the eastward should not bring the south point of Chang-shan in line with Island head, bearing N. $\frac{1}{4}$ E., until the north point of Miao-tau island is seen clear of Ship point (the western point of the southern part of Chang-shan) bearing N.N.W. $\frac{1}{4}$ W. This latter line of bearing clears Chang-shan Tail, when the course may be altered to the northward for the anchorage on the south side of Chang-shan. Or should the anchorage in Hope sound, on the north side of Miao-tau island, be preferred, after rounding Chang-shan Tail, steer N.W. by W. $\frac{1}{4}$ W., until Ellis island is just seen clear of Club point, bearing about N. by E., then run in on that line and anchor, with Cairn hill, the northern summit of Chang-shan, bearing N.E. by E., the temple on Miao-tau E. $\frac{1}{4}$ S., and the summit of Siau-hi-shan N.W. $\frac{1}{4}$ W., or as near to this position as circumstances will

admit. The bottom, as is generally the case on this coast, is stiff mud, and therefore holds well.

If intending to pass through the strait without anchoring, after clearing Chang-shan Tail, keep on the north side of the strait in 6 or 7 fathoms, and be careful of getting into 10 and 12 fathoms, as the deepest water borders the Teng-chau bank projecting from Temple point, on the southern shore of the strait, to avoid which, Teng-chau point should not be brought eastward of S. E. by E. until Ta-hi-shan island bears N. by E. $\frac{1}{4}$ E., when edge to the southward, or if necessary haul round into Temple bay, between the shoal and the rocks which extend nearly $1\frac{1}{2}$ mile off between Temple and Hwang bays.

On leaving the anchorage in Temple bay, keep to the westward, to avoid the rocks just noticed; and if bound into Niau-tau strait, in proceeding to the northward, the point off which they lie should not be brought to the westward of S. by E. until Teng-chau point bears S. E. by E.

Vessels bound to the Pei-ho, or other ports in the Gulfs of Pe-chili and Liau-tung, are recommended to use the channel on the north side of Chang-shan island, the course and distance from 2 miles outside of Alceste island to the middle of which is W. N. W. 99 miles. As before stated, with the exception of the Hesper and Fisherman rocks, and the reef extending a mile to the southward of Sha-mo island, the whole of the entrances to the northward of Chang-shan appear to be clear of danger.

The channel between To-ki and Ta-kin islands cannot be recommended to a stranger on account of the Fisherman rock; but if compelled to take it, and intending to pass northward of the rock, do not bring the south end of Ta-kin to the northward of N. W. by W. $\frac{1}{4}$ W., until Kaoshan island opens west of To-ki. In passing to the southward of the rock, do not bring the northern point of To-ki to the southward of West until its eastern point bears South.

There is a narrow deep channel between the North and South Hwang-ching islands, but at its east entrance, nearly in the centre, there is the rock which dries 6 feet at low water, and, therefore, nearly always visible. There is also the reef with a flat rock on it, extending a quarter of a mile from the north-west point of South Hwan-ching.

Tides.—It is high water, full and change, at the anchorage off Teng-chau, at 8h. 0m., and the springs' rise is about 7 feet. At Miau-tau island, it is high water at 10h. 35m., and the rise is about 6 feet. Between the Shantung promontory and the neighbourhood of Miau-tau strait the flood tide sets to the westward, and the ebb to the eastward; but within the strait, a few miles westward of Teng-chau, the flood will be found setting to the eastward, and the ebb to the westward. This is probably the effect of the water from the Yellow Sea flowing between Shantung promontory and Korea into the Gulf of Pe-chili, and being repelled from the Liau-tung coast westward, around the circular shores of the Gulf of Pe-chili, has, when it reaches Teng-chau, sufficient strength to resist and overcome the feeble efforts of the eddy tide setting round Shantung promontory to the westward.

From Teng-chau the coast takes a W. S. W. direction for 25 miles, to a projecting point, on which stands a village; it then trends south, curving gradually round to the westward, and forming the southernmost shore of the Gulf of Pe-chili.

GULF OF PE-CHILI.

Aspect of Coast.—From Mian-tau strait the southern coast of this gulf trends first in a south-westerly direction for 50 miles; it then bends round to the west, north-west, and north to the mouth of the Pei-ho. The shore is low and flat, and shoal water extends some distance from the land.

Between Mian-tau strait and Lai-chau the shore is exceedingly dangerous, and should be approached with caution. Chi-ma-tau promontory is a hill, about 250 feet high, joined to the mainland by an isthmus of sand; the sea face is abrupt, but reefs extend from it nearly $1\frac{1}{2}$ mile, with 10 and 11 fathoms close to. Sang-tau island is low and flat, with a large village on it; the island is surrounded by extensive reefs, and should not be approached within 2 miles; the outermost reef has a sand island on it. Lutai bay is full of shoals. Sanson or Saddle hill, 300 feet high, forms a point in a sandy plain. Fuyung Quoin is an island resembling a quoin; a rock lies one mile outside it.

Lai-chau fu 萊州府, or Thistle city, said to be in lat. $37^{\circ} 13' N.$, long. $119^{\circ} 50' E.$, stands near the eastern point of the mouth of its contiguous river. There is a fort and high craggy cliffs a little to the eastward.

The Lai-chau Bank, of hard sand, and exceedingly dangerous, extends 11 miles in a N.W. by N. direction from a low point between Fuyung Quoin island and Saddle hill. The Saddle bearing S.E. by E. leads in 7 to 8 fathoms close to the eastward of its north extreme; and Fuyung Quoin in line with the high sharp peak of Mount Elias, S.S.E. leads to the westward.

Li-tsin Ho.—The vicinity of this river may be known by the singular nature of the bottom—a yellow clay, into which the lead sinks 4 to 6 feet. Its bar is well marked by the Chinese, the estuary taking an easterly direction through the banks.

From Lai-chau to this river the coast is very low, and skirted by sand banks. From the Li-tsin ho to the Ta-san ho the shore is irregular and broken by large openings; the sand banks extend out in some places 3 or 4 miles. The Ta-san ho is smaller than either the Li-tsin ho or the Pei ho; the bar takes a northerly direction.

Between the Ta-san ho and the Chi-kau ho the sand plain is somewhat higher, and the beach steep at high water; at low tide it would dry out a mile.

The Chi-kau Ho is a salt water creek, which enters the sea through the banks by a narrow tortuous channel, having a bar nearly dry at low water. It runs up about 3 miles to some villages, is 60 to 70 yards wide, carries 15 to 16 feet water, and boats could lie in it in 2 fathoms at low tide, not more than 300 yards from *terra firma*. The springs rise about 9 feet and neaps 7 feet.

The anchorage off this river is open from North to South. The water is very shoal, there being only 4 fathoms at 8 miles, and 2 fathoms at about 2 miles from the entrance. There are shoals of 7 feet at about 4 miles from the mouth of the river; a clump of trees bearing S.W. $\frac{1}{2}$ W. clears the north shoal.

Small vessels can close the shore at half-tide on that bearing to about $1\frac{1}{2}$ mile, in 12 feet water. The passage over the bar should not be attempted without buoying.

Coast between the Chi-kau Ho and the Peh-tang Ho.—Between the Chi-kau ho and the Pei ho the soundings are still shoal, the depths being only 4 fathoms at 7 or 8 miles from the coast. The sands, which dry out at low water to a distance of $1\frac{1}{2}$ mile, are hard, and men can walk on them without inconvenience. At about 8 miles south of the river there is an inlet which may be mistaken for a river, and into which the water flows at half flood. At two places between the Chi-kau ho and Pei ho the sea overflows at very high tides, but only to a depth of a few inches; the country inside is a plain of sand, apparently dry, except at places at the top of the tide, and is almost entirely uncultivated. There appears to be almost an unbroken line of sandy beach at the high water level, raised sufficiently to be above the influence of ordinary tides.

An extensive flat runs out between Pei ho and Peh-tang ho, dry land appearing to run in about a north and south direction. The mud at the mouth of the Pei ho appears to be soft only where it is thrown up on the banks from the force of the stream.

Sha-lui-tien 沙壘田 Island and Banks.—Sha-lui-tien island, distant 120 miles to the N.W. by W. of Teng-chau, lies at the south-east extreme of an extensive range of sand banks, which should be approached with caution, particularly in thick or foggy weather. The island is low, but it has a temple on it, which, standing alone and upon an elevated spot, is conspicuous. Some of the banks dry at low water.

There are passages between these banks, through which small junks go, and shoals innumerable, over which nets are spread, but there appears to be no open channel between the banks and the mainland; there is a junk passage, in some parts available only at high water.

Tien-tsin Ho 天津河, or Pei Ho 白河 (i.e., White River, the entrance being known by the former name.) The *Pique* anchored off the entrance of the Pei ho, in 5 fathoms, with the entrance bearing W.N.W. distant about 7 miles, and the beacon on the bar W $\frac{1}{2}$ N. 4 miles. As it was then nearly high water and spring tides, the vessel was expected to touch the ground at low water; not less than 23 feet, however, was obtained alongside during her stay, which is the least depth a vessel drawing above 20 feet should attempt to anchor in.

The holding ground at this anchorage is excellent. A heavy gale would bring in an unpleasant sea, yet with good ground tackling and plenty of cable out, it was considered that a sailing vessel ought to ride out a summer gale. The anchorage seems to be a wild one in winter, but if the gales are off shore the sea would not be heavy.

Bar.—The bar at the entrance of the Pei ho is about 2 miles in length, in a N.W. by W. and S.E. by E. direction, and consists of hard mud. It presents less difficulty than the mud banks on either side of the river entrance, for the passage across the bar is wide, while between the banks the deep water channel

is much contracted. Neither are the banks easily distinguished; at high springs the ripples over them are not visible.

The river is very tortuous, as might be expected from its running through a flat country. A vessel of suitable draught to cross the bar would reach Tien-tsin without much trouble. Some of the straight reaches are shallow, and must be passed at high water in a vessel drawing more than 8 feet. At the bends of the river the water is always deep—as much as 6 fathoms;—and all points must be avoided, and the vessel steered round the elbows of the river.

Directions.—Having entered the Gulf of Pe-chili by the channel between Chang-shan and To-ki islands, the course and distance from Kao-shan island to the anchorage off the Pei ho is W.N.W. 138 miles, with regular soundings of 12 and 14 fathoms. With a strong S.E. wind caution is necessary, lest the vessel be driven too near the Sha-lui-tien banks.

The south-western part of these banks is very steep-to, having from 10 to 8, 6, and 3 fathoms, rocky and shingly bottom. Good anchorage is in lat. $39^{\circ} 2'$ N. off the western end of the banks, particularly in N.E. gales, when the anchorage off the river is much exposed.

In running for the anchorage off the Pei ho, having sighted Sha-lui-tien island, do not come to the northward of lat. $38^{\circ} 54'$ N., on which parallel the vessel will, when past the island, soon shoal to 12 fathoms, and will carry that depth until the west end of the banks bears North, when the soundings will decrease gradually towards the river to 8 and 7 fathoms, when she may either haul up for the anchorage off that place, or proceed farther north to the anchorage before mentioned, under the west end of the shoals.

In running for the entrance of the Pei ho, should the temple on Sha-lui-tien island be sighted, when it bears North and just visible from the deck, steer W. by N., and a run of 30 miles will reach the outer anchorage off the river. In approaching the bar, bring the temple at Tung-ku on a N.W. by W. $\frac{1}{2}$ W. bearing, keeping it well open to the left of the southern fort. A vessel should anchor and ascertain the height of the tide on the bar before attempting to enter.

To cross the bar, weigh at three-quarters flood, which sets strong to the northward across the flats; stand in, keeping the temple on the above bearing until the mouth of the river begins to open, then haul up N.W. $\frac{1}{2}$ N. for a long house, still keeping the temple to the left of the southern fort, behind which it must not be shut in till well within the river. The least water will soon be crossed, and when it deepens 2 feet and the temple bears W. $\frac{1}{2}$ N., haul short in for it. The position of the banks will then be seen by the ripple on them, and the course is in mid-channel.

Tides.—During the period the *Pique* remained at the anchorage off the mouth of the Pei ho, from 14th April to 10th July, it was high water, full and change, at the bar at 4h. P.M., and springs rose 9 to 10 feet, and neaps about 6 or 7 feet. The usual depths on the bar at high water springs were $10\frac{1}{2}$ and 11 feet; occasionally there were 12 feet, but it was very rare. At low water the lead in several places was barely covered.

In October 1854, the time the U.S. surveying squadron remained off the river, it was high water, full and change, at 2h. 39m., and springs rose 8 feet and neaps $6\frac{1}{2}$ feet.

GULF OF LIAU-TUNG.

The tides are irregular. North and N.W. winds retard the flood and diminish its rise; East and S.E. winds increase the rise and retard the ebb. Slack water sometimes lasts 3 to 4 hours at the neaps. The flood sets North; the ebb S.S.E. The tide in the river runs 2 to $3\frac{1}{2}$ knots per hour.

Near the Sha-lui-tien banks the flood takes a W.N.W. direction along their edge at the rate of $4\frac{1}{2}$ knots at the springs, and the ebb to the S.E. at the rate of 3 knots; on their west sides it sets to the northward, but its velocity is not so great. The tide at the entrance of the river is subject to great irregularities, the stream in the river having a motion more less towards the sea, except when the prevalence of strong southerly winds swells the gulf, and thereby augments the depth of water in all the adjacent rivers equally with the Pei ho.

A strong north-west wind drives the water out of the Gulf of Pe-chili, reducing the depth several feet along the coasts; but a southerly wind forces the water into it, between Korea and Shantung, thereby augmenting the depth considerably all over this shoal gulf, which is gradually subject to a decrease in depth occasioned by the accumulation of soil, deposited by the many rivers following into it.

Winds and Weather.—During the period the *Pique* remained off the Pei ho weather was fine, but sudden changes of wind were frequent, and as a breeze from seaward brings in a heavy sea, much caution is necessary to avoid accidents to loaded boats.

From 14th April to 7th May the changes of wind were constant, and rarely was it smooth enough for boatwork throughout the whole day. Latterly the sea was much smoother, and boat operations were not often interrupted. On the 7th June a very heavy squall came on from the northward, and it blew hard from that quarter until next day.

GULF OF LIAU-TUNG.

Hulu Shan Bay, on the eastern coast of the Gulf of Liau-tung, affords excellent shelter from north or north-easterly gales. It is about 7 or 8 miles wide, and its north point, when bearing N.N.E. $\frac{1}{4}$ E., has an abrupt aspect, sloping to the northward and vertical towards the sea, and has a reddish appearance. The land here is moderately high, and may be seen at the distance of from 24 to 27 miles. Between 2 and 3 miles within the point is the watering place, which it is not prudent to approach nearer than $3\frac{1}{2}$ fathoms, at low water. H.M.S. *Blonde*, in August 1840, anchored in $8\frac{1}{2}$ fathoms, with the north point bearing N.N.W. $\frac{1}{4}$ W.; village E. $\frac{1}{4}$ N.; a remarkable red hill E. $\frac{1}{4}$ S.; watering place E. by N. $\frac{1}{4}$ N.; and south point of bay S. $\frac{1}{4}$ W.*

When approaching this anchorage, the soundings continued regular until passing the first point about a mile, when they began to decrease fast, so that 2 miles within it there were but 3 fathoms water. When at anchor in 5 fathoms, the north point of the bay bore N.W. $\frac{1}{4}$ N., the southern point S. $\frac{1}{4}$ W., a remarkable

* See Plan of Hulu Shan bay, No. 1,303; scale, m = half an inch.

red hummock East a little northerly, a village E.N.E., distant about one mile off the nearest shore to the northward.

Tides.—It is high water, full and change, in Hulu Shan bay at 2h. 30m., and the rise is about 9 feet.

Port Adams, on the east coast of the gulf, is formed at the head of a deep indentation (Society bay) of the coast line, and its entrance is in lat. $39^{\circ} 16' N.$, long. $121^{\circ} 32' E.$ It affords secure shelter for a large number of vessels, and at high tide offers a passage of 23 feet water.

Fu-chu 復洲 Bay.—The land on the north side of Fu-chu bay, the next inlet to the northward of Hulu Shan, is of singular formation, and bears such a resemblance to extensive fortifications that at first sight there is a difficulty in believing they are not forts. The westernmost hill having this appearance is the largest, and has a small conical projection above its regular surface; two others with flat summits are near this to the eastward, and they all have a remarkable appearance from north or south.

When standing into the bay, the soundings will decrease gradually from 13 and 14, to 8, 9, 6, and 5 fathoms; the latter depths being carried some distance before they decrease. The *Bittern* carried 3 fathoms for a considerable distance, when endeavouring to close a fleet of piratical vessels, and at length hauled out in a few inches more than her draught.

Directions.—A vessel after avoiding a reef, which will be seen off the south-west point of Fu-chu bay, may stand boldly in to the north-east, and find safe anchorage in 5 fathoms water, with an island in the bay (which, from its appearance, was called Flat Top isle) bearing from E. by N. to E.N.E.; north-east extremity of the bay about N. by E.; and a projecting point (Flat cape) S.E.

In leaving this anchorage for the northward, or coming in from that direction, care must be taken to avoid a spit which extends about 2 miles to the S.S.W. from a point to the westward of Flat Top isle, and upon which the sea sometimes breaks.

From Fu-chu bay the *Bittern* steered to the north-east, keeping generally about 10 miles off shore, in regular soundings, which decreased, as she proceeded, from 12 to 9, 7, 6, and 5 fathoms to lat. $40^{\circ} 12' N.$, when the depth decreased suddenly to $3\frac{1}{2}$ fathoms on a bank, said by the Chinese to extend from the shore. A peninsula, resembling an island, which was named Saddle, then bore E. by N. $\frac{1}{4} N.$, and hauling out to the north-west, when Saddle bore East, the water deepened to 14 and 17 fathoms. The depth was soon found steady at 12 fathoms, and she again kept to the north-east, the water gradually shoaling, until she anchored for the night in $5\frac{1}{2}$ fathoms. The land on this part of the coast has a barren and irregular appearance, but not very low.

In a bay 10 or 15 miles to the northward of Fu-chu, a remarkable rock was observed, resembling a fore-and-aft schooner with gaff topsails set.

Kai-chau fu 蓋洲府, in about lat. $40^{\circ} 30' N.$, long. $122^{\circ} 25' E.$, and 10 miles inland, is surrounded by a high wall; the houses are low and ill built, but thickly inhabited, and it has an extensive trade. The *Sylph*, in November 1832, was obliged to anchor here at a great distance from the land, there being

only $2\frac{1}{2}$ fathoms water about 6 miles off, so flat is this part of the gulf. Not being able to communicate with the shore, which was fronted with ice, and having no shelter from strong north winds, this vessel proceeded from hence towards Kin-chau-fu 金州府, a place of considerable trade, about 20 miles inland, on the bank of a river that falls into the northern part of the gulf, where, it is said, vessels may anchor in lat. $40^{\circ} 37' N.$, about 6 miles off shore.

There are several dangerous shoals in the upper part of the gulf; for the *Sylph*, after weighing from the coast at Kai-chau-fu, deepened gradually to 4, 5, and 6 fathoms, then grounded on a shoal in lat. $40^{\circ} 34' N.$, long. $121^{\circ} 48' E.$, about 24 miles from the land, and narrowly escaped being wrecked, the vessel striking hard for a considerable time, until the wind changed from the north-eastward to the southward, which raised the water in the gulf and floated her clear of the shoal.

Niu-chwang 牛壯 City and Port.—H.M.S. *Bittern* anchored in $4\frac{1}{2}$ fathoms in the north-east part of the gulf in lat. $40^{\circ} 38' N.$, long. $122^{\circ} 00' E.$ The land, although only 7 or 8 miles distant, had become so low as not to be visible from the deck, but from the mast-head its extreme bore S. $\frac{1}{2}$ E. and N.W. by W.; the latter being the bearing of a hummock detached a short distance from the land to the eastward of it. To the north-east a large town was observed, and found to be 2 or 3 miles within the bar of the large river Liau, which leads about 20 miles up to the city of Niu-chwang.

The channel used by the large junks, and the deepest into this river, is on the southern side of the entrance, where 4 and 5 fathom water were found over the bar; but the officers of the *Bittern* were unable to carry these soundings out to the ship, or determine if a channel of any such depths extended so far.

Tides.—During the *Bittern's* stay off this port, the depth of water varied from 5 to $3\frac{1}{4}$ fathoms, which was about the period of neap tides, showing a greater rise and fall than is experienced on the coast of Shantung; but the tides in the Gulf of Liau-tung must be greatly influenced by seasons and local circumstances. Upon one occasion, in Fu-chu bay, the depth varied only 2 feet.

The flood tide sets to the eastward, and the ebb out of the gulf.

Directions.—The Chinese pilots state that islands and shoal water will be found in the upper and centre parts of the Gulf of Liau-tung, and that large trading junks bound from Niu-chwang and neighbouring ports to the Pei-ho keep on the eastern shore of the gulf to Hulu Shan bay, or even farther south, before they steer across to the westward.

The *Bittern*, when proceeding down the gulf, kept a greater offing, and carried regular soundings, increasing from 5 to 16 fathoms, off Fu-chu bay. The pilots stated there were other shoals to the westward of the spit on which she nearly grounded on her way up.

Vessels visiting these regions ought to be supplied with Chinese pilots; these, however, can only be trusted to a certain extent. A stranger should start with an offing of about 10 miles from the western head of Hulu Shan bay, and steer N.E. by N., preserving a distance of 15 miles off shore, to avoid the dangerous sand spit extending 10 or 12 miles from the shore in lat. $40^{\circ} 12' N.$, and when

Saddle island bears E. by S. edge to the eastward; soundings gradually decreasing from 14 fathoms will then be carried to the anchorage off the Liao ho.

The Great Wall of China at Shan-hai Kwan 山海關 abuts the sea on the western shore of the Gulf of Liao-tung, in lat. $39^{\circ} 58' N.$, long. $119^{\circ} 51' E.$, originating within 100 yards of the beach, and having a masonry pier jutting out into the sea. The Wall rises generally from 20 to 30 feet, in sections similar to the walls of Chinese cities, and with a thickness of 15 to 25 feet. Running round and inclosing a portion of ground close to the seaside, and thus converting it into a fort; it then runs obliquely inward to the west, and at a distance of about $1\frac{1}{2}$ mile from the beach embraces the city of Ning-hai; then striking over the highly cultivated plains at the foot of the mountains, it runs up one of the ridges, and apparently to a great extent along the higher portion of the chain, the different towers marking at intervals its course, after it has itself ceased to be visible. These mountains, about 2,000 feet high, approach to within about $4\frac{1}{2}$ miles of the beach, and though to a certain extent covered with vegetation, they are devoid of all cultivation; not so, however, the plain at their foot, which rises gradually from the sea shore to a height of about 450 feet up the side of the hills.

Ning-hai 寧海.—The anchorage off Ning-hai is near the extremity of the Great Wall. It is open from N.E., round easterly, to West. With the pagoda bearing N. by W. the depth is $4\frac{1}{2}$ fathoms at $1\frac{1}{2}$ mile, and 2 fathoms at a quarter of a mile, from the shingle beach; inside the latter depth the bottom is rocky and unsafe. A shoal, with only 3 feet on it and steep-to, extends about a mile off Shoal point.

Tides.—It is high water, full and change, at Ning-hai, at 12h., and the rise is about 6 feet.

Creek Point.—The sandy bay to the westward of Ning-hai, between Shoal point and Creek point, a distance of 8 miles, appears clear of rocks; the beach is steep, and the 5-fathoms line of soundings about 2 miles from the shore.

Shallow Bay, between Creek point and Rocky point, is about a mile deep, clear of rocks, and the shore is sufficiently steep to allow large boats to land easily. The depth is 2 fathoms at half a mile, and $4\frac{1}{2}$ fathoms at 2 miles from the shore. A reef of rocks, which generally breaks, encircles Rocky point at half a mile distant.

Liu-sia-kwang.—The anchorage off Liu-sia-kwang is open from N.E. by E. to S.W. The depth is $4\frac{1}{2}$ fathoms at $2\frac{1}{2}$ miles, and 2 fathoms at a quarter of a mile from the beach, which is of sand.

The passage into the beach, near Liu-sia-kwang, is between two sand banks, the one running out from Rocky point, the other from the mouth of the river Tai-cho. The depth in the passage is 2 fathoms at three-quarters of a mile, and $4\frac{1}{2}$ fathoms at $2\frac{1}{2}$ miles from the shore; the beach is steep, and the landing good. The rise and fall of tide is 6 feet.

Tai-cho Ho and Yang Ho.—The river Tai-cho enters the sea at about $1\frac{1}{2}$ mile to the south-west of Liu-sia-kwang. This river is described as short, and arising from the low hills at the back of Liu-sia-kwang, and running in a westerly direction, it does not cross the great road to Peking. The bar at the

river entrance has only $1\frac{1}{2}$ foot water on it at low water. Between the bar and Liu-sia-kwang the soundings are shoal.

The river Yang, which enters the sea at $2\frac{1}{2}$ miles to the south-west of the Tai-cho, is very shallow; and though a few junks pass a short distance up the river at high water, the greater number discharge their cargo just within its mouth, whence it is carried into the interior in carts. The depth is $1\frac{1}{2}$ foot over the bar, and the rise and fall 6 feet. The beach is composed of sand and mud.

The anchorage off the Yang is open from N.E. by E. to S.W. The water is shoal, the depth being $4\frac{1}{2}$ fathoms at about 4 miles, and 2 fathoms at about $1\frac{1}{2}$ mile from the river's mouth.

Tides.—It is high water, full and change, at the entrance of the rivers Tai-cho and Yang, at Oh. 15m.; and the rise is about 6 feet.

The Pu Ho, which enters the sea at 7 miles south of the Yang, though shallow and of no great length, is made use of by junks at high water. They discharge their cargoes near a dilapidated fort on the north bank, about a mile from the entrance, mounting six or seven guns, besides having a parapet for gingalls. The bar is nearly dry at low water. The rise and fall is about 6 feet.

The anchorage off the river Pu is open from N.N.E. to S.W. The depth of $4\frac{1}{2}$ fathoms cannot be carried nearer the river than 5 miles East of the entrance, and 2 fathoms at a mile to the S.E.

The Pu river, running from the south-west, drains a flat of rather a swampy nature, and, indeed, appears to originate in rather an extensive marsh. Sand hills, 30 to 40 feet high, extend for several miles along the beach to the southward of the river, and the ground is swampy behind them. At the extremity of these sand hills the formation of the coast changes. A bar of sand lies about half a mile from the coast, and forms a protection for junks, which enter at high tide through one of the breaks in it, and unload at low water. Where the breaks in the sand exist, a sort of river seems to form, in which there may be 2 feet at low water; this sometimes extends inland for several miles, and occasionally joins the sea by a circuitous route some miles distant; the intermediate space of soft mud, covered with a thin layer of sand, dries at half tides.

Lau-mu Ho.—The anchorage off this river is open from N.N.E. to S.S.W. The depth is $4\frac{1}{2}$ fathoms at $1\frac{1}{2}$ mile to S.S.E. of the entrance, and 2 fathoms at $1\frac{1}{2}$ mile. At the entrance there is a narrow bar, with 3 feet over it low water. Having passed the bar, 15 feet may be carried close to the west point, and 12 to 13 feet up to a village, or rather a series of storehouses, about a mile up the river, on the right bank, where many of the junks discharge; a breastwork affords protection to this spot.

Water.—A strong stream of fresh water runs from the Lau-mu into the sea, discolouring it to some distance. A vessel might anchor off the bar, and pump in fresh water during the ebb, for though of a muddy colour, it rapidly settles, and is wholesome for drinking. The water in the river is exceedingly good.

Tides.—At the entrance of the river Lau-mu it is high water, full and change, at 1h. 30m.; ordinary springs rise 5 feet.

Ching Ho.—At 16 miles to the south-west of the Lau-mu is the entrance

to the Ching, which is a considerable river, but apparently conveying a smaller flow of water from inland than the Lau-mu. The anchorage of the river is exposed from N.E. to S.W. The depth is $4\frac{1}{2}$ fathoms at $2\frac{1}{2}$ miles to the S.E., and 2 fathoms at one mile, to the east of the entrance.

The passage to the river is through a break in the shoal, and across a bar, on which there are only 2 feet at low water. Inside the bar there is good anchorage for a large number of small vessels. The river has two entrances: one from the eastward through a creek which dries at half-tide; the other from the westward, which is nearly as deep as the main entrance. Mud flats, covered at high water, extend for some miles in all directions. No good landing can be found before arriving near the village of Ta-ching-ho, which stands on the left bank at about 5 miles from the entrance. Any vessel that can cross the bar will find sufficient water to enable her to reach the village.

To the westward of the Ching-ho is a mud flat, formed into an island by the main and western branches of that river, a few miles west of the western entrance; a sand pit, which is covered at high water springs, joins the Sha-lui-tien banks.

Tides — It is high-water, full and change, at the Ching-ho entrance, at 1h. 20m., and springs rise about $6\frac{1}{2}$ feet.

Hai-ye-tse and Chiang-ho. — Coasting round the east, south, and west sides of the Sha-lui-tien banks, the village of Hai-ye-tse is reached, but it cannot be approached, even by boats, except at high tide, the shore drying a mile out at low water.

To the northward of Hai-ye-tse is the village of Chiang-ho. There is a small creek here, in which junks unload, and from which the village derives its name.

The Peh-tang 北塘河, though a smaller river than the Pei-ho, and apparently navigable only for a short distance above its mouth, where stands the town of Peh-tang, has a deeper, and perhaps more easy channel of approach.

The bar of the river has 5 feet over it at low tide; with the north fort bearing N.W. $\frac{1}{2}$ W., 14 feet may be carried across it at high water; the passage up the river is then about N.W. Vessels are recommended to cross the bar at high water, and wait for the banks to show themselves before proceeding up; the channel is from 1 to $1\frac{1}{2}$ cable wide between the banks.

The anchorage off the Peh-tang is open only from S.E. to South. The depth is $4\frac{1}{2}$ fathoms at 8 miles from the shore.

Tides. — It is high water, full and change, at the bar of the Peh-tang, at 10h., and the rise and fall is about $9\frac{1}{2}$ feet.

NORTH COAST OF YELLOW SEA.

From Liau-tie-shan head, the south extreme of the province of Liau-tugn, the northern coast of the Yellow Sea extends upwards of 180 miles in an easterly direction, having many islands fronting it in some parts, but it is as yet little known to Europeans. Off Liau-tie-shan head are violent tide ripples, of alarming appearance to a stranger. After trending first in a north-easterly, and then in an easterly direction, the coast line takes a south direction, near the meridian of 125° E., forming a great concavity between Liau-tung and the western coast of the Korea.

In September 1840, H.M. ships *Blonde* and *Pylades* visited this part of the coast,* and determined the position of several points on their route. The south head of Liau-tie-shan is a high, bold promontory; with the head bearing E.N.E. 15 miles, the *Pylades* anchored in 15 fathoms, mud, the ebb tide setting strong to the S.E. From this to the head, the water deepened to 20, 25, and 30 fathoms, and when the head bore N.W. by W. 6 miles, discoloured water was seen bearing North, having the appearance of a long dangerous spit running out from the land to the southward; three boats were sent to examine it, but after sounding every part, had nothing less than 30 fathoms, off shore from 3 to 5 miles—the change in the colour of the water being occasioned, it is supposed, by the muddy bottom or the meeting of the tides.

The coast from Liau-tie-shan head trends to the N.E. by E., and is high and bold, with deep sandy bays, affording shelter for junks with the prevailing northerly wind. The *Pylades* anchored in a small bight, called in the chart *Seou-ping-tao*, about a mile off shore, with the head bearing W. by S. $\frac{1}{2}$ S. about 16 miles. The bight is well sheltered from north-westerly and easterly winds, but exposed to the southward and south-westward. From the anchorage in 16 fathoms, the west point of a rocky island, which forms the bay, bore E. by S. $\frac{1}{2}$ S., centre of the town N.E. by E.; the bottom is irregular, but the holding ground good. Good water may be procured in small quantities N.W. by N. from the anchorage.

The Cap.—E. by S. from the above bay is a small island, which on this bearing appears round, and much like the Cap in Sunda strait, but in other directions it resembles a gunner's quoin; it appeared steep-to, and has a rock off it to the southward. The *Pylades* passed between the Cap and the coast running along shore to the eastward, having no bottom with 20 fathoms. Running from the Cap to the E.N.E., at the distance of 6 miles, passed close to two other islands, one of which resembled a ship under sail. These islands appeared steep-to; no bottom was obtained with 25 fathoms at half a mile from the shore.

Encounter Rock, which was found by H.M.S. *Encounter* in May 1860, lies in lat. $38^{\circ} 33' 50''$ N., long. $121^{\circ} 37'$ E., a little west of the direct course from Shantung promontory to Ta-lien hwan.

* The description of the northern coast of the Yellow Sea (with the exception of Ta-lien hwan, which is by Commander J. Ward, H.M.S. *Actæon*, 1860), is by George Norworthy, Master of H.M.S. *Pylades*, 1840.

It is about 70 yards in length east and west, has 24 and 26 fathoms close-to, and seen from the north or south appears like a patch of small rocks, but is in reality only two. From the eastern or highest, which is 12 feet above high water, the Cap bears N.½W.; the summit of San-shan-tau N.N.E.¾E.; a prominent peak N. by W.¾W.; Sampson peak N. by E.¾E.; and Liau-tie-shan summit N.W. by W.¾W.

Ta-lien Hwan 大連灣 is at the southern end of the peninsula which forms the south part of the province of Liau-tung. It is an extensive inlet, 10 miles deep north and south, and its principal entrance, formed between West Entry point and the San-shan islands, is 5 miles wide. Between the two San-shan islands there is also a passage one mile wide, and another 2 miles wide, between the inner San-shan and the east point of the bay. Both of these channels, and the main entrance, appear to be quite clear of danger; but only one east, of 7 fathoms mud, has been yet obtained in San-shan-tau channel.

To a vessel making the land in clear weather, Sampson peak, a noble mountain, 2,213 feet high, would be visible, and when it is brought to bear North, the main entrance to Ta-lien hwan is open.

San-shan Tau.—These islands, which extend in a southerly direction from the eastern point of Ta-lien hwan, are 500 feet high, and may be approached to within a mile. They lie nearly North and South of each other, and when seen east or west of the former bearing, appear to consist of three, in consequence of the two high portions of the outer island being connected by a low isthmus of small boulders and shingle, about 10 feet above high water. This isthmus was chosen as the place of the Observatory, and is in lat. $38^{\circ} 52' 54''$ N., long. $121^{\circ} 49' 14''$ E.

Victoria Bay is in the north-west angle of Ta-lien hwan, bearing from the outer San-shan island N.W. by W. It is formed by the coast line trending N.W. by W.¾W. 4½ miles from West Entry point, then inclining to the southward, and gradually curving round until its eastern point bears from West Entry point N. by W.¾W., distant 6 miles.

This bay affords good anchorage in from 5½ to 3 fathoms, protected from all winds, excepting those from E.N.E. to E.S.E. An easterly gale would have a clear fetch of 10 miles, but it is not quite evident that one has ever occurred in the spring and summer months. The inhabitants on the north side of Victoria bay stated that these gales were prevalent, and sent in a heavy sea, while on the other shore of the same bay it was said that they were not known; and the shores of the bay certainly show no evidence of ever having been visited by one. The same people who stated that easterly gales were so prevalent, also added that Victoria bay was full of sunken rocks; but none as yet have been discovered that are not visible at low water.

The conclusion was, that in spring and summer the prevailing winds are south-westerly, southerly, and south-easterly, occasionally easterly, and if the wind from the latter quarter blows with any force, a heavy swell must necessarily set in. The *Actæon* anchored with Sampson peak bearing N.E., Bay rock W. by S.¾S., and the small San-shan island E. by S.¾S.

Hand Bay, which is formed at the north extreme of Ta-lien hwan by a peninsula jutting out from the mainland, affords excellent anchorage, quite

land-locked for small vessels of 10 feet draught, and within signal distance of vessels lying in Victoria bay. The middle of its entrance bears N. by W. $\frac{1}{2}$ W., distant 10 miles from the outer San-shan island.

A reef, 9 cables long, and dry, or nearly so, at low water, extends to the S.W. from the north side of this bay. Its south-west end bears North, distant one mile from the east point of the above peninsula.

Dangerous Reef.—E.N.E. about 12 or 15 miles from the San-shan islands at the entrance of Ta-lien hwan, is a dangerous reef of rocks lying a considerable distance from the coast, about a mile in extent north and south, and nearly level with the water's edge. The *Pylades* passed 2 miles to the southward of them, having soundings of 35 fathoms. The weather being squally and rainy, no observation could be obtained.

Blonde Island.—From the above reef the *Pylades* steered E. by S. with a strong S.W. wind, for the south extreme of a group of islands, and found good shelter, in 17 fathoms, mud, on the east side of Blonde island, in lat. $39^{\circ} 2' N.$, long. $122^{\circ} 49' E.$: the anchorage is sheltered from all but northerly winds.

Four miles to the eastward of Blonde island are two islands, lying north and south of each other, having a deep water channel between them. There is a remarkable rock bearing S.S.W. from the south point of Blonde; it is high, appears like a junk under sail, and can be seen 12 or 15 miles off. The *Pylades* passed inside this rock, and had no bottom with 30 fathoms.

CHAPTER VIII.

PRATAS ISLAND AND REEF; AND BASHI, FORMOSA, MEIACO-SIMA, AND LU-CHU ISLANDS.

VARIATION in 1861, Pratas shoal, $0^{\circ} 30' E.$; Bashi islands, $0^{\circ} 30' W.$; Meiaco-sima group, $1^{\circ} 15' W.$; Lu-chu islands, $2^{\circ} 0' W.$

Pratas Island and Reef.—Pratas island, the north-east end of which is in lat. $20^{\circ} 42' 3'' N.$, long. $116^{\circ} 43' 22'' E.$, rises from the west side, and near the middle of the sunken part of the Pratas reef. It is about $1\frac{1}{4}$ mile long, E. by S. and W. by N., half a mile wide, and 40 feet high, of which elevation the scrubby bush, with which it covered, forms about 10 feet. It is composed of sand, not a particle of mould or earthy matter could be found on it, and its shape is that of a horse-shoe, enclosing a shallow inlet or lagoon, which runs into its western side for about half a mile, and must afford shelter to the Chinese fishermen who come here to fish in the early part of the year. Brackish water can be obtained by digging a few feet into the sand. Gannets are numerous, and may be knocked down with sticks.

The island is visible at a distance of 9 or 10 miles, in clear weather, from the deck of a large vessel; from the westward it will make like two detached but contiguous islets, the centre being lower than the ends. It is visible when near the south extreme of the reef, but more conspicuous when approaching it from the westward or northward.

The Pratas reef, the north-east point of which is in about lat. $20^{\circ} 47' N.$, long. $116^{\circ} 53' E.$, is a coral barrier of nearly circular form, encircling a lagoon with 5 to 10 fathoms water in it, and thickly studded with coral knolls round its margin, but comparatively clear near the middle. The reef is about 40 miles in circumference, one to two miles broad, and slightly flattened on the northern side. Nearly two-thirds of it, on the north, east, and south sides, are just dry at low-water springs; the remainder, on western side, forms a sunken barrier, across which there are two channels leading into the lagoon, one on each side of Pratas island. The north channel is about 3 miles wide, between the island and the edge of the breakers, and 3 fathoms may be carried near the middle at low-water springs. The south channel is by far the best of the two, from its being wider, a little deeper, as well as its comparative freedom from coral knolls.

Tides.—During the survey of the Pratas reef by H.M.S. *Saracen*, April 1858, it was high water, full and change, at about 4h. A.M., and the rise was about 5 feet. There was only one perceptible ebb and one flow in the 24 hours at the springs. The highest tide occurred on the third day after the full moon, but the tides were very irregular.

PRATAS REEF.

Anchorage.—Although the Pratas reef is steep-to in most parts, there are several spots where, in case of necessity, a vessel might anchor outside the breakers, particularly on the west side, abreast the middle of the channels, through the sunken part of the reef, and at the distance of about $1\frac{1}{2}$ or 2 miles on either side of the island. At each of these spots there is good anchorage, in the N.E. monsoon, in from 20 to 10 fathoms, but the position abreast the south channel is considered the best, the sunken reef at this part being deeper and the bottom more even than in the channel north of the island. A vessel of light draught might even anchor in safety on the reef, in the middle of the south channel in $3\frac{1}{2}$ fathoms at low water, or cross it and take up a berth inside the lagoon in 10 fathoms fine sand.

Captain Ross, of the Indian Navy, visited this reef in August 1813. The first soundings obtained were 74 fathoms, fine coral, about $1\frac{1}{2}$ or 2 miles from the north-east point; from thence the former vessel steered along the north side, about three-quarters of a mile from the breakers, in soundings of 31 to 38 fathoms; the *Investigator* keeping about a quarter of a mile off, had great overfalls of 10 to 24 fathoms. After rounding the north-west part of the reef about a mile off in 35 fathoms rocky bottom, they anchored in 24 fathoms, at about $1\frac{1}{2}$ mile from the west end of the island, with the island bearing from S.E. $\frac{1}{4}$ S. to E.S.E. About half-way between this position and the shore the depths were 4 and 5 fathoms, and then very shoal water.

H.M.S. *Highflyer*, in May 1857, anchored about 8 cables from the west end of the island, in 20 fathoms coral and clay, the extremes bearing S.E. $\frac{3}{4}$ E. and E. by S. She also anchored, with stream anchor, at half a mile from the south-east edge of the reef, in 32 fathoms, white mud, with the centre of the island bearing N.W. $\frac{1}{4}$ W. distant 10 miles; there were 13 fathoms water at 2 cables from the edge of the shoal, and 7 fathoms at a short distance from the edge. In April 1859, H.M. Steam Gun-boat *Leven* anchored three-quarters of a mile off shore in 5 fathoms, with the centre of the island bearing E. by N.

Caution.—In beating against, or running with, the strength of the monsoon, up or down the China Sea,* vessels should always endeavour to pass to leeward of the Pratas reef, on account of the invariable set of the current to leeward; for there are no soundings to indicate a near approach, and the weather is frequently thick and hazy in this vicinity.

The safest quarter to make the reef is from the north-west, the island being on its western side, and the currents in the neighbourhood invariably running in a N.E. or S.W. direction, according to the monsoon.

In approaching the reef, a vessel should be coned from the fore-top. The sun should be well up above the horizon, and if possible astern or on the beam, as the bottom can then be easily seen in 10 fathoms.

* The Macaolesfield bank, lying in the fairway track from Singapore to Hongkong, is said to be growing up. The *Truro* shoal, in lat. $16^{\circ} 19' N.$, long. $116^{\circ} 41' E.$, was discovered by Captain T. J. Duggan, of the ship *Truro*, in September 1857. He states, "Whilst taking my forenoon observation, distinctly saw the bottom, white coral. Got a cast of the lead instantly at 10 fathoms; again, about half a mile more north, had 19 fathoms; steered north for another half mile, and had 22 fathoms, and the next cast no bottom at 40 fathoms. No shoal patches were visible from the mast head."

FORMOSA CHANNEL.

Y'Ami and North Islands.—Y'Ami, the northern island of the Bashí group, is about a mile in circumference and tolerably high; the position of the islet lying off its south-west point is, lat. $21^{\circ} 4' 56''$ N., long. $121^{\circ} 58' 24''$ E.

North island, lying 2 miles S.S.W. from Y'Ami, is high and steep-to, except on its eastern side, off which, at a cable's length, there are three islets and some detached rocks. The channel between Y'Ami and North island is safe, and carries soundings with rocky bottom, but too deep for anchorage; that between Mabudis and North island is 9 miles wide, and free from danger.

The North Bashí rocks could not be found by Captain Sir E. Belcher, who states, "they have no existence in the position assigned to them in the charts, nor in the visual radius from the mast head of the *Samarang*, 180 feet above the level of the sea."

Gadd Rock or Cumbrian Reef.—The position of this dangerous rock was ascertained by Captain Rose, of the Indian Navy, to be in lat. $21^{\circ} 43'$ N, long. $121^{\circ} 41'$ E.; Little Botel-tobago sima bearing N.½W. It is about half a cable long, and the boat had a depth of 12 feet about the middle of the reef at, probably, the time of high water, as Captain Gadd, who appears to have first discovered it in the Swedish ship *Oster-Gothland*, January 20th, 1800, perceived some points of rocks amongst the breakers; for there is a considerable rise and fall of tide hereabout on the springs, affording sufficient cause to think that some parts of the rock must be level with the surface of the sea, or visible above the hollow of the waves at low water, when there is much swell on.

Vale-roto Rocks lie on nearly the same parallel, and 44 miles westward of Gadd rock, and about S.½W., distant 11 miles, from the low South Cape of Formosa. They are a mass of detached rocks, above, even with, and below water; the highest may be seen at about 5 miles. The channel between them and the south end of Formosa is safe; but very turbulent rippings are often experienced in this and the neighbouring channels, and they have been observed to run so high that the breakers resembled the sea breaking furiously over a dangerous shoal.

Directions.—Quitting the Batan islands during the North-east monsoon, or merely working up to the northward past them, it is advisable to make short boards to the north-east on the western side of Batan island until Mount Irada bears S.S.E.; then make a stretch to the north-west, and work up on the western sides of Ibayat, Siayan, and Mabudis; but, on reaching the latter, pass through easterly between it and North island, where the current will favour northerly.

Keep well to the eastward, or endeavour to pass well to windward of Botel-tobago sima, as the currents in that neighbourhood press strong to the westward, and the changes from strong breezes to calm, attended with swell, are troublesome, as well as harassing.

Gadd rock lies in the fair way of the Bashí channel, and to avoid it, vessels should keep either towards Botel-tobago sima, or towards the northern part of

FORMOSA ISLAND.

the Batan group, taking great care to avoid the mid-channel track. When passing southward of the above danger in thick weather or in the night, keep well towards the latter group, making allowance for a northerly current, which is generally experienced in light winds and during the South-west monsoon. From lat. $21^{\circ} 15' N.$ to $21^{\circ} 21' N.$ is a good track to preserve when passing between the Batan group and Gadd rock in thick weather. Several vessels during light winds have been drifted by the current between Formosa and Botel-tobago sima.

Botel-tobago Sima is a high island, $7\frac{1}{2}$ miles in length in a N.W. and S.E. direction, appearing in form of a saddle, or with a gap in it, when viewed from a S.S.W. or N.N.E. direction, and is visible about 50 miles from the mast-head. It is well inhabited, and its highest part is crowned with trees; the north-east peak is 1,850, and the west peak 1,820 feet, above the sea.

There are several large villages on the southern part of the island, and on the north-west side are several rocky points. Detached rocks, remarkable for their spire-like form, lie off the northern extremity. The coast is rocky in almost every part, and probably dangerous to land upon, as these needle rocks are seen in many parts of the island; with the exception, however, of those off the north extreme, they are attached to the island by low land; but the shore under water often assumes the character of that which is above, in which case a vigilant look-out for rocks would be necessary in rowing along the coast.

Little Botel-tobago is a small island of considerable height, lying about $3\frac{1}{2}$ miles to the S.E. of the southern part of Botel-tobago. A reef, steep-to, projects about a cable's length from its south end.

The Alceste shoal, marked on the chart in about lat. $22^{\circ} 5' N.$, long. $121^{\circ} 18' E.$, is supposed to have no existence.

FORMOSA OR TAI-WAN ISLAND.

Formosa island (called by the Chinese Taiwan 臺灣, i. e., Terrace Beach) is about 210 miles long. N.N.E. and S.S.W., and between 60 and 70 miles wide at its broadest part, which is near the middle. The land is generally high in the interior, but low in some places seaward, with soundings near the shore, particularly on the western side. The southern part has on it a high double-peaked mountain, visible 60 miles in clear weather, from which the land slopes down to the southward, terminating in a low projecting point called the South Cape.

From the south end of Formosa to Liang-kiau, the coast range, from 250 to 300 feet high and composed of dark rocky cliffs, is backed by an inland range, rising to the height of about 2,000 feet above the sea, and terminating to the southward in a remarkable craggy peak of the same height, from which extends to the south-east the long low promontory of the South Cape. The hills about this part of the island are mostly bare, their summits only being wooded.

The wind blowing a brisk gale from the westward prevented the *Inflexible*

from examining the coast about the south end of Formosa, but the sea was observed breaking very heavily over the Vale Rete rocks, and heavy tide ripples extended nearly the whole distance across to them from the South Cape.

To the north-east of the cape there is a village and harbour for small vessels; and there are, it is said, soundings near the shore on the west side of the cape.

Lambay Island, lying about 9 miles from the western coast of Formosa, and 29 miles to the north-west of the South-west point, is about 180 feet high, and may be seen at a distance of 18 miles. The island is $3\frac{1}{2}$ miles in length north and south, has high yellow cliffs on its western sides, a small sandy beach on its eastern.

Capt. Ross examined this island, and no bottom was obtained with 70 fathoms line westward of it; but about 3 miles eastward of the island a bank of soft mud commences, which, extending off Formosa, has soundings on it of 15 to 26 fathoms. A reef extends off about a mile between the south-east and north-east points of the island; it is steep-to, there being 25 and 30 fathoms water close to its edge. In steering from the South-west point of Formosa, along the western coast, he had no soundings off the point until within half a mile of the shore, then had 120 fathoms; and with Lambay island bearing about W.N.W., got 30 and 40 fathoms on the mud-bank when about $1\frac{1}{2}$ mile off Formosa, and passed between the island and the coast. At anchor in 15 fathoms, soft bottom, about 3 miles off the town of Pong-li, with it bearing N.E. by E. $\frac{1}{2}$ E., Lambay island bore from W. $\frac{1}{2}$ S. to W. $\frac{3}{4}$ N., the north-west extreme of the coast, a small black hummock, N.W. $\frac{1}{2}$ N., and the south extreme of the coast S.S.E.

From Pong-li the *Discovery* worked to the westward, and anchored in 15 fathoms about 3 miles off the coast of Formosa, and 5 or 6 miles from Lambay island, with the black hummock bearing N. $\frac{3}{4}$ W., brow of western hill N.N.W. $\frac{1}{2}$ W.; a town near which there is a river or inlet and many boats at anchor bore N.E. by E, distant 3 or 4 miles, Lambay island from S. by W. $\frac{1}{4}$ W. to S. $\frac{1}{2}$ E., the south-east extreme of the coast S.E. $\frac{1}{4}$ S. In working across, as Lambay island was approached, the soundings increased from 35 fathoms into deep water, having 52 fathoms about a mile off Lambay from the south-east and eastern parts of which a reef projects a short distance. From this last anchorage she steered about 4 miles to the westward, then got off the bank of soundings.

Liang-kiau Bay.—At 11 miles N.N.W. from the South-west point of Formosa is Liang-kiau bay, the south point of which is about 300 feet high, and makes like an island from the northward; the point terminates abruptly seaward, and slopes gradually towards the head of the bay, leaving a level between it and the high hills trending from Pong-li.

The north point of the bay, bearing about N.N.E. $2\frac{1}{2}$ miles from the south point, is a low grassy flat extending from the foot of the hills, and on it stands the village of Liang-kiau, which is the most southern Chinese settlement on the west coast of Formosa. The bay is open to all westerly winds, but it affords good anchorage in the North-east monsoon. It is about $1\frac{1}{2}$ mile deep, and from the depth of 9 fathoms, sand, between the outer points, the water shoals gradually towards the long sandy beach at its head. The approach to the bay

is quite clear; outside the soundings deepen rapidly from 10 to 15 and 30 fathoms, and from 45 to 50 fathoms, at 5 miles from the coast.

Pong-li is a small town at 15 miles N. by W. $\frac{1}{2}$ W. from Liang-kiau bay and a short distance inland, about a mile to the northward of a remarkable square clump of trees on the beach. The *Inflexible* anchored abreast the town in 5 fathoms water, at about 3 cables from the beach. Landing was effected in Chinese catamarans, the surf being too high for the vessel's boats, although there had been but little wind the three previous days.

The shore between Pong-li and Ta-kau-kon is a low sandy beach; but a short distance within are numerous clusters of bamboos and houses, and a cultivated country. The depths are from 8 to 9 fathoms at 2 miles from the beach, but in crossing the bight, in which the river Tollatock is marked on the chart, no soundings were obtained with the hand-lead.

Port Ta-kau-kon.—Ape hill, called by the natives Ta-kau, bears S. by E. $\frac{1}{2}$ E., 22 $\frac{1}{2}$ miles from the old Dutch fort of Zelandia. It appears like a truncated cone, on a North and South bearing, and is 1,110 feet high, sloping towards the land side, and makes at a distance like an island. At 4 $\frac{1}{2}$ miles N.E. of Ape hill is another remarkable hill, 700 feet high, which, from its resemblance to a huge whale sleeping on the water, was named Whaleback; and N.N.E., 12 miles, there is a small triangular-shaped hill, and a large detached piece of tableland resembling a quoin, on a North and South bearing. These are the only landmarks on this part of the coast (which is all very low,) and of these Ape hill is the most useful, as it stands out on the coast line, and is frequently seen distinctly when all the others are shrouded in mist.

This hill is one vast block of coral, and although resembling the crater of a volcano in the peculiar form of its apex, no traces could be discovered of volcanic action. From its summit to the southward it descends in a gradual though somewhat rugged slope, and terminates in a huge nearly level block, of a mole-like appearance, which, jutting through the beach to seaward for about 300 yards, forms a sheltered anchorage for small vessels in the strength of the North-east monsoon. This mole is separated from the hill by a deep chasm, 50 fathoms wide, and within this is the little port of Ta-kau-kon. The south-west part of the mole is a steep cliff, named Saracen head.

This port has a narrow bar, with 11 feet on it at low water, extending from the south side of the entrance, curving to the N.W. and N.N.W. in the direction of Ape hill; but directly this is passed, the water deepens to 4, 6, and 9 fathoms just within the port. The entrance, though narrow, is steep-to and quite safe of approach, but unfortunately the anchorage within is so very confined that there is no room for a vessel to swing; it is therefore necessary to moor head and stern. The tides are also rather strong when near the springs; but this anchorage is susceptible of great improvement at small expense, and as Formosa is opened to commercial enterprise this place must advance in importance.

Vuyloy Shoal.—This dangerous sand-bank, about half a mile in extent, and with only from 8 to 12 feet on it at low water, lies a good mile off shore, S.S.E. 4 $\frac{1}{2}$ miles from the entrance of Port Kok-si-kon, W. by N. $\frac{1}{2}$ N. 4 $\frac{1}{2}$ miles from fort Zelandia, and S.W. by W. $\frac{1}{2}$ W. 2 $\frac{1}{2}$ miles from Joss islet. With southerly

winds the sea breaks heavily on it, but with off-shore or north-east winds there is but little break. The soundings are $4\frac{1}{2}$ to 5 fathoms at $1\frac{1}{2}$ mile westward of the bank, and 3 fathoms between it and the shore.

Vessels, when bound from Port Kok-si-kon to Port Ta-kan-kon, will pass well to the westward of this shoal, by not approaching the coast within 3 miles, or not coming into a less depth than $4\frac{1}{2}$ or 5 fathoms, until fort Zelandia bears East.

Tides.—The flood stream sets in a N.N.W. direction from $1\frac{1}{2}$ to 2 knots an hour along this part of the coast. The ebb runs S.S.E., except near Kok-he-mung, where its direction is S. by W. out of the harbour.

Port Kok-si-kon, or Kok-si-kong 角西港 (the north point of entrance to which, Gull point, is 32 miles to the N.N.W. of Saracen head) can only be recognized by the number of large junks generally at anchor inside, and by three larger clumps of huts than can be found on any of the outer sand-banks which front all this part of Formosa, and which are elevated only 2 or 3 feet above high water. These banks run in lines, generally parallel to the coast, from 2 cables to half a mile broad, and are pierced at every mile or so by narrow channels, having depths varying from 7 feet and under. There is no vegetation in sight from the western sand-bar; the main land of Formosa can only be seen in very clear weather from it, and the whole intermediate space seems to be an intricate mass of sand and mud banks and shallows, with occasional patches of sedge.

These sand-banks are occupied by a few poor fishermen, whose miserable huts and bamboo rafts are the only relieving features of this dreary scene. Ape hill to the southward, and the southern islands of the Pescadores to the westward, will be found useful marks to run in for Kok-si-kon, which bears N.N.W. 30 miles from the former, and E. by S. $\frac{3}{4}$ S. 26 miles from East island, Pescadores. The old Dutch fort of Zelandia, built in 1634, is just in sight from the anchorage, from which it bears S.E. $\frac{1}{4}$ S. and is distant $7\frac{1}{2}$ miles.

This port is the outlet of several small shallow streams, which here unite and form a channel through the mass of sand-banks fronting the coast. This channel or port runs N.E. and S.W., and, taking the 3-fathoms line as its boundary inside, is three-quarters of a mile long and only 2 cables broad, with $4\frac{1}{2}$ fathoms in the middle; it is, therefore, necessary to moor N.W. and S.E. The bar has 12 feet on it at low water springs. The deepest part is generally marked by the natives with bamboos; but, as the channel is both wide and straight, and the bottom remarkably even, it is by no means difficult of access for vessels of 12 or 13 feet draught at high tide. The *Saracen* sailed in, drawing 13 feet 2 inches, but then the sea was remarkably smooth; vessels, therefore, drawing over 13 feet should not attempt to enter, particularly with any swell on.

Fresh water is procured from Tai-wan fu, and if a vessel should only require this article, she will do better by anchoring at once off that town, about three-quarters of a mile off shore; where in $5\frac{1}{2}$ fathoms, with the old Dutch fort bearing N.E., she will find capital anchorage and good shelter from December to March. During the rest of the year the chances of south-west winds would render this position unsafe, and anchorage should of course be sought farther

out. At the distance of $1\frac{1}{2}$ mile N.W. of the old fort there is a large clump of trees on the outer sand-bar.

The ruins of the old Dutch fort are about two-thirds of a mile inside the sand, about 60 feet above the sea level, and the only conspicuous land-mark in this neighbourhood; they can be seen 8 or 9 miles from a vessel's deck. The capital of the island, Tai-wan fu, stands S.E. 2 miles from the fort, and large junks trading to the place in the North-east monsoon generally anchor off the fort, and send their cargoes by this route to the town. Here the mainland of Formosa approaches within a mile of the sand-bars fronting the coast, and although it is generally marshy and flat, it is cultivated with rice, &c.

There is no remarkable feature in the coast until within 8 miles of Ape hill, where commence some low mud cliffs, and there is also a small piece of table land about a mile inland. The coast between the old Dutch fort and Ape hill is nearly a straight line of beach, pierced by four small streams, navigable only for boats.

Tides.—It is high water, full and change, at Port Kok-si-kon at 11h. 30m., and the rise is about 3 feet. The tide from the bar inside sets fairly through the channel; its greatest strength being about a knot. Outside the bar the flood sets northward, along the coast, the ebb southward; its strength varies in different positions, running with much greater velocity off the west sand-bar or the edge of the deep water than in the shoal water bight off Tai-wan, where it is occasionally variable in strength and direction.

Directions.—The high land of Formosa, immediately over Port Kok-si-kon, may be distinctly seen in very clear weather from the Pescadores, but as it is generally obscured, and the coast low and sandy, it will be prudent at all times, when bound to that port from the westward, to be certain of the vessel's position before losing sight of East island, or one of the southern islands of that group.

The mast heads of a large fleet of junks, usually at anchor in the small harbour of Kok-he-mung, at 5 miles S.E. by E. of Kok-si-kon, will serve as a guide on approaching the coast, and when at a distance of 3 or 4 miles from the shore, three clumps of huts and trees, (the southernmost clump abreast of West point being the largest and most conspicuous,) Joss islet, and fort Zealandia, are objects sufficiently well defined to mark the locality. Joss islet has a clump of dark trees on its southern end, and the Joss house on it a white front to seaward. Ung-lo and So-co are remarkable hills, and may generally be seen when the mountains in the interior are hidden. The clouds sometimes rest upon them, when they appear as the highest land in the vicinity. Ung-lo, 1,080 feet high, is the southern termination of a long table range, which falls steeply for a few hundred feet, and rises again to the round hill of So-co, 880 feet high.

The *Inflexible* in 1858 anchored in 6 fathoms off Port Kok-si-kon, Observatory point bearing N.E. by E. $1\frac{1}{4}$ mile. The wind being light from the S.S.E. and South, an attempt was made to enter the port in the vessel's boat, but it was unsuccessful, as the sea broke the whole way across the entrance. The Chinese fishermen stated that the channel and sand-banks have altered considerably since surveyed by Richards in 1855. There were no junks at

anchor in the port, but the harbour of Kok-he-mung was crowded with them. A party from the vessel landed inside the latter harbour, and visited Tai-wan fu, the capital of the island.

North Coast of Formosa.—The north end of Formosa is high and mountainous, except the north and north-west point, which are low, and have reefs extending a considerable distance off; from it the Tam-sui range rises to the height of 2,800 feet above the sea, and is generally covered with clouds. In the neighbourhood of, and eastward of Ke-lung harbour, the coast hills are wedge-shaped, nearly all perpendicular to the eastward.

Petou point, the north-east extreme of Formosa, is a peninsula, 400 feet high, and from a distance appears like an island; the small boat harbour and fishing village of Petou is close to the westward of it. The coast from thence to Ke-lung harbour is steep-to, all the off-lying rocks, which are composed of sandstone, showing above water. The most remarkable feature on this coast is Dome peak, which makes in that form from the N.E. At 5 miles westward of Petou point is the entrance to Ohimmo bay, in which a vessel might anchor if in distress, or forced in by a northerly wind. The depths are from 4 to 10 fathoms at the entrance, and 5 and 4 fathoms at the head of the bay, under the lee of the point on its eastern side. This point is foul, and should be given a berth in entering.

At $7\frac{1}{2}$ miles westward of Petou point, and 2 miles eastward of Ke-lung harbour, is Pe-ta-ou bay, open to the N.W., surrounded with reefs and rocks, and shoal at the head; it might, however, be available to a vessel embayed to windward of it, and in distress. Immediately westward of Ke-lung harbour is a bay $4\frac{1}{2}$ miles across, with numerous reefs running off the points within it; its north-west point is formed by a remarkable sandstone peninsula, named Masou, 250 feet high, and quite perpendicular to the north-west.

To the westward of this peninsula is the deep bay and valley of Masou, in the middle of which is an inlet with three rocks lying to the S.E. of it, two of which are covered at low tide, the other always shows. From thence the coast appears bold until Foki point, the north end of Formosa, is approached. This point is very low, and has a dangerous shoal extending off about a mile from it, and then trends round to the westward. It will be prudent to give this point a wide berth, as H.M.S. *Royalist* shoaled suddenly from 30 to 60 fathoms, and there were breakers close to leeward of her.

From Foki point the coast trends to the south-west $8\frac{1}{2}$ miles, to Tam-sui 淡水 or Tan-shwui harbour, with a reef fronting it for the first 5 miles, and in some places extending nearly half a mile off shore. The coast rises gradually, and is very flat for several miles inland to the Tam-sui range. From Tam-sui harbour the coast line bends in a W.S.W. direction for 20 miles to an elevated sand hill, named Paksa point. The first 5 or 6 miles is table land, about 600 feet high, and is steep-to until within 2 miles of the harbour. This table land is succeeded by low land with sand hills; along this part reefs extend about half a mile off shore, with soundings of 7 fathoms well clear of them, and there are numerous creeks, in some of which junks were seen lying. Here the brig *Ann* was lost on the 10th March 1842.

From Paksa point the coast runs S.S.W. $\frac{1}{2}$ W. 10 miles to a table hill 360

feet high, with low land on either side of it. From a position off this hill the elevated land about Tam-sui shows over the low land as three hills, and in fine weather the high ranges, rising to the height of about 12,000 feet in the centre of the island, will be seen to the S.E. Along this part of the coast, as to the northward, are numerous creeks and reefs extending a short distance off; the bottom is dark sand, and not fit for anchoring on. South of the table hill, reefs extend nearly half a mile off shore, and there is a barred river, in which several junks were seen lying.

At 9 miles to the southward of the table hill is the port and village of Teukcham, in which were several large junks. This port is only available for vessels of light draught, and is formed by a sand spit running to the southward; with the end of this spit bearing North, and half way between it and a sand bluff to the southward, a vessel may anchor in 4 fathoms at low water; smaller craft can go farther in and anchor in $1\frac{1}{2}$ fathom, but the holding-ground is bad and open to the N.W. The sand bluff forms the south-west point of the port, and the point, which is steep-to, has some fishing huts on its extreme.

The bay to the southward of Teukcham has a reef extending from its centre, and at the south corner of the bay is a barred creek, in which were numerous junks. A low serrated sandy ridge, with a low sandy point, on which is a large fishing village, terminates this bay; off the point, and off the village, the water is deep well in, but it appears to shoal off the coast to the southward. With the exception of the ridges, the land in this neighbourhood is low, the hills are all sandy, and show little vegetation. A range of hills having a low but remarkable peak at the point forms the southern point of the bay, off which it is shoal; from thence the coast range extends about 5 miles. The coast appeared to be steep-to, but, as in other places along it, the holding-ground is bad. Single peak, a round isolated hill, 200 feet high, is a remarkable object in this locality. A river disembogues to the southward, with a large bamboo plantation on its north side. The survey was not continued farther than Single peak, but the coast to the southward was observed to be very low.

Directions.—As far as Lieutenant Gordon was enabled to examine the north-west coast of Formosa, it was his opinion that a great advantage would be obtained, were sailing vessels, instead of hugging the coast of China or beating up in the middle of the Formosa channel during the North-east monsoon, to reach well over, and at all events during the day to stand close in to the Formosa shore, particularly on the ebb tide. The latter stream was always found setting strong to the N.E., whereas the flood ran very weak to the S.S.W., the former having the advantage over the latter of at least 8 miles every 24 hours. It was also observed that until the middle of the Formosa channel was passed, there was no southerly set; and though the *Royalist* experienced a continuation of severe weather for several days, during which time she generally stood off and on under easy sail, she generally weathered and was always to windward of her reckoning.

The time of high water, full and change, on the north-west coast of Formosa, is at noon, and the bottom is dark sand, with, occasionally, shells and broken stones; soundings of 30 to 40 fathoms near the shore, and 25 to 17 fathoms at 10 to 20 miles off. The water commences shoaling about $1\frac{1}{4}$ or 2 miles from

the shore, and the depths decrease rapidly. The sea near the coast in moderate weather is smooth, the wind blowing along the land.

Tam-sui Harbour, the south point of the entrance to which is in lat. $25^{\circ} 10' N.$, long. $121^{\circ} 26' E.$, is formed between a high range (2,800 feet above the sea) to the north-east, and a remarkable double hill (the north peak of which is 1,720 feet, and the other 1,240 feet above the same level) to the south-west. There is a bar across the entrance with only 10 feet on it; but having entered, the depths increase to 4 fathoms, and a large river runs to the south-east, with two smaller branches leading through the valley to the southward. The principal town, named Min-ka, in the north part of Formosa, is said to be about 13 miles up the main branch of this river.*

Tides.—It is high water, full and change, in Tam-sui harbour at 11h. 45m., and the rise is from 7 to 12 feet. From observations made in the *Royalist*, when at anchor off the harbour, October 1847, five days before full and change, the flood set S.S.W. $1\frac{1}{2}$ knot per hour at its strength, and $3\frac{1}{2}$ knots the whole tide; and the ebb ran to the N.E. 3 knots per hour at its strength, and 7 miles the whole tide. The flood appeared to run about 4 hours, the ebb 8 hours. As the ebb sets along shore to the north, and has the advantage of 4 miles in the twelve hours and more during springs, it will greatly assist a vessel, when beating to windward during in the North-east monsoon.

Directions.—The anchorage off this harbour is unsafe, as the holding ground is not good, being a loose sand, and a vessel, though with a good scope of cable out, is likely to drive, even in moderate weather. When the wind freshens from the N.E. a heavy sea rolls in, breaking even in 3 fathoms, and a sailing vessel must immediately go to sea, for should the wind veer to the N.W. that might not be accomplished.

The former mark for entering the harbour, (viz., the small round red fort upon a little hill on the north side of the river, in line with the highest peak, 2,800 feet high, behind the town, bearing E. $\frac{1}{2}$ S.) can no longer be used, as the bar is constantly changing its position. The present mark over the bar, in 1857, is the red fort in line with the lower fort's centre, which will lead in nothing less than $3\frac{1}{2}$ fathoms at high water; but no stranger should attempt to enter without a pilot.

Ke-lung Harbour (岐龍頭 Ke-lung-tan.)—The north end of Formosa forms, between Fo-ki and Petou points, an extensive bay, 22 miles wide, into which the North-east monsoon rolls a heavy sea; the current during the ebb sets strong to the eastward, and only occasionally changes its direction to the N.W. during the flood. In the middle of this bay is Ke-lung island, a remarkable black rocky island, rising precipitously on all sides to the height of 580 feet above the sea, with rather a flat summit. This excellent landmark guides to the entrance of Ke-lung harbour, the entrance to which bears from it S.W. by S., and is distant 2 miles. At a cable's length from the north-west side of the island is a conical rock 100 feet high, and broken water extends 2 cables from its south-west extreme; the other parts of the island are steep-to, though the strong tide ripples around it frequently resemble breakers. No

* See Plan of Tam-sui harbour, No. 2,376; scale, m. = $3\frac{1}{2}$ inches.

danger exists between it and the shore, the soundings being 30 to 35 fathoms sand, but the heavy tide ripples must be guarded against.

Ke-lung harbour, but for Ke-lung island, would not be easy to find, as a sand spit projecting from the low island or cay (Bush island) on the eastern side of the entrance, almost conceals it. The entrance is formed between Palm island on the east and Image point on the west. Off-lying the former, West 3 cables, is Bush island, a low rocky islet about 10 feet high, and covered with shrubs, thus narrowing the entrance between it and Image point to 4 cables. The passage between Palm island and Bush island is used only by boats.

Image point is remarkable from the number of detached pieces of rock which the action of the sea has worn into grotesque figures; the summit over it, 390 feet high, has several patches of stratified cliff on the seaward slope. Palm island is three-quarters of a mile long, east and west. The land over its northern coast is 200 feet above the sea. Close to its north-west extreme, and almost connected with it, is Macedonian mound, 140 feet high. Both the island and the mound are fringed with steep shelving rocks, having 7 and 10 fathoms close to; in approaching them from the north-east, Image point should not be brought to the westward of S.W. $\frac{1}{2}$ S.

On the western side, a little within the entrance, is a small bight, named Merope bay. The anchorage in it is in 9 fathoms nearest to the coral bank which extends from the northern shore.

Tides.—It is high water, full and change, in Ke-lung harbour at 10h. 30m., and the rise, when uninfluenced by the weather, is about 3 feet. The flood at the entrance sets fairly into the harbour about a knot an hour; the ebb towards the eastern shore and rocks off Bush island. In the narrows of Junk passage the streams run with great velocity. Outside the harbour the flood sets into the bight towards Masou peninsula; the ebb to the south-eastward along the coast.

Directions.—When nearing the entrance of Ke-lung, a remarkable hill, named Crag peak, will be seen at the head of the harbour, and by steering for it on a S. $\frac{1}{2}$ W. bearing, it will lead in mid-channel between Bush island (known as Tung-fung-se to the natives) and Image point. The soundings in the middle of the entrance are 14 to 12 fathoms, decreasing a little towards the coral banks which border the shores on either side.

After passing Image point, steer S.E. $\frac{1}{2}$ S. for the sandy bay on the eastern shore, anchoring in 5 $\frac{1}{2}$ or 6 fathoms, mud, good holding-ground, when the points of Junk passage (the channel on the south side Palm of island) are open, Image point bearing N.W. $\frac{1}{2}$ W. The vessel will then be 2 cables to the southward of Inflexible reef, which is a sunken ledge of rocks, 1 $\frac{1}{2}$ cable in extent, with 6 to 12 feet on it at low water; from the western and shoalest part of this reef Crag peak bears S.W. by S. southerly, and Image point W. by N. $\frac{1}{2}$ N. A sunken ledge, with 3 to 9 feet on it, also extends 1 $\frac{1}{2}$ cable East of Crag peak. The junks anchor in 2 and 2 $\frac{1}{2}$ fathoms at a quarter of a mile to the southward of the peak, and about a mile from the town of Ke-lung, which can only be approached by boats at high water.

A sailing vessel must use much caution in leaving this harbour, during the North-east monsoon, in consequence of the heavy sea rolling in, and there

being no anchorage outside. With a light wind short tacks should be made, and the entrance of the harbour kept open until an offing is gained.

Coal Harbour, the next inlet to the eastward of Ke-lung, is so called from its proximity to the coal mines opened by the Chinese on the hill sides of the southern shore of Qua-see-kan bay. It offers anchorage and shelter for one or two vessels only; and should the mines ever be worked by Europeans, the coal, which is of good quality, could be conveyed to Harbour rock by means of a railroad along the west shore of the bay, at the base of the hills. A short pier from the north side of the rock would enable a vessel to lie alongside in 3 or 4 fathoms water, and receive or discharge her cargo.

East Coast of Formosa.—With the exception of Sau-o bay this coast is without harbours, and deep water will be found close in to the land. The mountains rise almost immediately from the sea; their sides in some places are cultivated and scattered houses seen.

This coast is not visited by the full strength of the North-east monsoon. This probably results from the mountainous character of the country, which prevents the breeze blowing home. Sailing vessels, however, experiencing strong gales at 20 miles to the eastward, might feel cautious in venturing in-shore. Nor is there any necessity to run to leeward; but, if they should experience the breeze declining in strength, with less sea on the western board, particularly between 9h. A.M. and 3h. P.M., or up to sunset, they will find it advantageous to hug the coast as far as the depth of 20 fathoms; but within this limit caution is requisite, as sudden loss of wind, attended by inconvenient swell, might be attended, if followed by calm, with imminent danger.

Steep Island,* lying S.S.W. 11 miles from the north-east extreme of Formosa, is inhabited by Chinese, and cultivated in terraces to its summit, which is a sharp conical peak about 1,200 feet above the sea. At the east end of the island there is another peak, 800 feet high, which falls abruptly and overhangs the sea. The *Inflexible* passed between this island and the coast, but had no soundings with 40 fathoms line.

Kaleewan River.—At 10 miles S.W. $\frac{1}{2}$ S. of Steep island is the entrance to the Kaleewan river, the waters of which irrigate a fertile plain, about 13 miles long and 6 broad. At the time of the *Inflexible's* visit there were only 3 feet on the bar at low water, the rise of tide being from 2 to 3 feet. The surf broke heavily on the beach, and although there was an occasional break across the entrance, the vessel's gig entered in the wake of a junk without inconvenience; in going out, however, with the wind blowing on the shore, two seas broke into the boat, and nearly swamped her. The junks, with their high bulwarks and great buoyancy, enter with comparative ease, the crews poling them across with bamboos.

The general direction of the river is S.W. The entrance is about a quarter of a mile wide, but just within it narrows to 200 yards. At 4 miles up it is only 50 yards wide, and thus far it has a general depth of 5 to 6 feet, clear fresh water. At 7 miles from the entrance the depth is 3 to 4 feet, but the river was scarcely broad enough to allow the use of the boat's oars.

* The description from Steep island to Black Rock bay is by Mr W. Blackney, H.M.S. *Inflexible*, 1853.

Sau-o Bay, the south point of which is in lat. $24^{\circ} 36' N.$, long. $121^{\circ} 53' E.$, will be found an excellent place of shelter for vessels working up on the east coast of Formosa against the North-east monsoon. The bay is about three-quarters of a mile wide at entrance, and a mile deep, and in it are two small inlets; that in the south-west corner is a sheltered nook called Lam-hong-ho bay, which is said to have 5 fathoms water in it, and where two or three ships might lie moored, secured from all winds; that in the north-east corner is named Pak-hong-ho bay, in which there is good anchorage in 5 fathoms, sheltered from all winds, except those from South to S.E., which seldom blow.*

The westernmost and largest rock of the Sau-o reef is 70 feet above low water, and lies N.E. $1\frac{1}{2}$ mile from the south point of Sau-o bay, and E. by S. two-thirds of a mile from the north point. Two other smaller rocks bear E.N.E. 3 cables from it; the space between having rocks awash and others just above water, generally breaking.

To the north-west of the Sau-o reef, and N.E. from the north point of the bay, are rocks awash, generally breaking, a quarter of a mile in extent N.W. and S.E. There was no opportunity of examining these dangers, but to all appearance the ground was foul from the Sau-o reef to the north point.

The Breakwater reef lies nearly in the centre of Sau-o bay, and parts of it are uncovered and others are awash. The reef is $1\frac{1}{4}$ cable in extent, N.E. and S.W., and there is a conical rock 15 feet high rising from its north-east extreme.

Anchorage.—The *Inflexible* first anchored in the outer part of Sau-o bay in 13 fathoms, with the south point bearing South, and the conical rock on Breakwater reef W.N.W.; this, however, would be an unsafe position in easterly winds, although the holding-ground is good, black sand and mud. She then shifted her berth to a safe anchorage in from $5\frac{1}{4}$ to 6 fathoms water, inside Breakwater reef, with the conical rock bearing East, distant about a quarter of a mile.

Tides.—The streams are weak in Sau-o bay. The flood sets in a N.N.E. direction along the coast, the ebb S.S.W., about a knot an hour. It is high water, full and change, at about 10h., and the rise is 3 to 4 feet.

Directions.—When approaching Sau-o bay from the northward, pass half a mile to the eastward of the Sau-o reef, the highest rocks on which may be seen 8 or 10 miles off in clear weather, then haul up West for the anchorage. From the south-east the approach is quite clear, and the points of the bay may be passed at a cable distant. The passage between Breakwater reef and Rugged point, which lies S. by E. 3 cables from it, is clear, and the depth $5\frac{1}{2}$ fathoms in mid-channel.

The soundings in the outer part of the bay increase quickly seaward to 17 and 20 fathoms, and decrease gradually towards the beach. The north-west corner of the bay is rocky.

Chock-e-day.—Dome point, 650 feet high, is 3 miles south of Sau-o bay, and from thence to Chock-e-day, in lat. $24^{\circ} 6\frac{1}{2}' N.$, the coast is bold and precipitous, the mountains rising almost perpendicularly from the water's edge

* See Plan of Sau-o Bay; scale, $m = 1\frac{1}{3}$ inches, on Chart of Formosa Island, No. 1,968.

to the height of 7,000 feet. No soundings with 70 fathoms at from 1 to 1½ mile off shore. The inhabitants of Chock-a-day village were communicated with, but the high surf prevented landing. The aborigines were nearly naked, and used threatening gestures, brandishing their long knives and spears. A few Chinese were among them, and appeared much afraid that the natives would be injured, in which case they said their lives would be taken in revenge. The river marked on the chart in this latitude was not seen. At a mile off shore there was no bottom with 115 fathoms of line.

Black Rock Bay.—H.M.S. *Plover* anchored in this bay, in lat. 23° 8' N., long. 121° 24' E., and rode out a S.W. gale; but the bottom is uneven and rocky, the vessel swinging from 13 to 22 fathoms, and anchorage by no means to be recommended.

With the centre of the group of rocks (120 feet high) in this bay bearing S.W. by S., 2 miles, the depth was 29 fathoms, black sand; the next east to seaward, no bottom with 70 fathoms.

The east coast of Formosa, north of Black Rock bay, is rugged and rocky. The lower slopes of the hills are covered with grass; behind the hills the mountains rise to the height of 5,000 and 6,000 feet above the sea, and are clothed with dense forest.

Samasana Island by Collinson is in lat. 22° 41' N., long. 121° 28' E., and lies N. by W.½W. about 34 miles from Botel-tobago sima. Its north extreme is described as a long, low point, with a double hillock on it, and a pinnacle rock lying off it; the south point falls abruptly. The island, when visited by Capt. Belcher in H.M.S. *Samarang*, June 1845, had a population of about 150 persons, living in a village concealed within a bamboo hedge skirting the sea. It will be prudent to avoid the lee side of the island, as calms, eddies, and variables are likely to cause inconvenient delay.

Harp Island.—The supposed position of this island is lat. 23° 45' N., long. 122° 4' E. Lieutenant Boyle, of the U.S. Navy, in 1853, reports having seen a volcano in a violent state of eruption, distant about 10 miles from the land, in lat. 24° N., long. 121° 50' E.

Pinnacle, Craig, and Agincourt Islands are three islets lying to the north-eastward of the north end of Formosa. They have often been sighted by passing vessels, but as yet no description has been given of them; their positions are as follows:—Pinnacle, lat. 25° 27' N., long. 121° 58' E.; Craig, 25° 29' N., 122° 9' E.; and Agincourt, 25° 38' N., 122° 8' E.

Hoa-pin-su, Pinnacle, and Tiau-su Islands.—This group forms a triangle, of which the hypothenuse, or distance between Hoa-pin-su and Tiau-su, extends about 15 miles, and that between Hoa-pin-su and the southern Pinnacle island about 2 miles. Within this space are several reefs; and although a safe channel exists between Hoa-pin-su and the Pinnacle islands, it ought not (on account of the strength of the tides destroying the steerage), to be attempted by a sailing vessel if it can be avoided.* The extreme height of Hoa-pin-su is 1,181 feet, the island apparently being cut away vertically at this elevation, on the southern side, in a W.N.W. direction; the remaining portion sloping to

* See Chart of the Islands between Formosa and Japan, with the adjacent Coast of China, No. 2,415; scale, d = 3 inches.

MEIACO-SIMA GROUP.

the eastward, where the inclination furnished copious rills of excellent water. The north face of the island is in lat. $25^{\circ} 47' 7''$ N., long. $123^{\circ} 36\frac{1}{2}'$ E. There are no traces of inhabitants.

The Pinnacle group, which is connected by a reef and bank of soundings with Hoa-pin-su, allowing a channel of about 12 fathoms between it and the Channel rock, presents the appearance of an upheaved and subsequently ruptured mass of compact gray columnar basalt. On the summits of some of the flat rocks long grass was found, but no shrubs or trees. The rocks were everywhere whitened by the dung of marine birds.

Tiau-su, bearing N.E. northerly 15 miles from Hoa-pin-su, appears to be composed of huge boulders of a greenish porphyritic stone. The capping of this island, from about 60 feet to its summit, which is about 600 feet above the level of the sea, is covered with a loose brushwood, but no trees of any size.

Raleigh Rock, in about lat. $25^{\circ} 57'$ N., long. $124^{\circ} 11'$ E., rises abruptly from a reef to a height of 90 feet above the sea, and is perpendicular on all sides, covering an area of probably 60 feet in diameter, and appearing in the distance as a junk under sail. Captain Belcher states that the weather would not allow him to fix its position, but that as he found it lying upon the computed bearing, as given in the charts from Tiau-su, its position cannot be much, if at all, in error.

MEIACO-SIMA GROUP.

This group forms the westernmost portion of a chain of islands extending in an easterly and a north-easterly direction from Formosa to the southern extremity of the Japan islands.

It lies between the parallels of $24^{\circ} 0'$ and $25^{\circ} 6'$ N., and the meridians of $122^{\circ} 55'$ and $125^{\circ} 30'$ E., and is divided into two divisions. The Pa-chung-san, or western division, consists of ten distinct islands, of which five only are at all mountainous; the remainder are flat, like the coral islands in the Pacific, and similarly belted with reefs, which connect them into a distinct group. Chung-chi is a high uninhabited mass of rocks; and to the W.N.W. of it is Kumi island, which is conspicuous by the peculiar sharpness of its lofty peak, 770 feet high, and table base.*

Kumi Island is composed of coralline limestone, all its ranges are capped with trees and brushwood, but excepting the pine fir, which contains a great portion of resin, none attain any size. There are four villages on the island, one on the west, and two on the north side, one of which is in a basin-shaped valley. The principal town and port is on the north, in which were several junks of about 50 tons riding at anchor; but the entrance from the sea is so narrow and shallow, that ingress and egress can only be effected at spring

* See Plan of the Meiaco-sima group, No. 2,105; scale, m = half an inch.

tides and with very smooth water. Temporary anchorage, in fine weather, may be found on a sandy ledge to the northward of the town.*

Ku-kien-san and Pa-chung-san Islands afford several commodious harbours, and are, with good charts, quite safe of approach. Port Haddington, on the western side of the latter island, would shelter a large fleet, but it abounds with coral patches, rising suddenly from 10 or 15 fathoms almost to the surface. Except on the northern side of Ku-kien-san and the latter port, watering would be found very difficult, as the reefs extend a great distance from the mouths of the streams. Seymour bay, at the south-west angle of Ku-kien-san must also be excepted, for there a fine stream enters the sea in deep water, and a vessel might be moored sufficiently close to lead the hoses from Hearle's pumps into her, without the intervention of boats and oaks.

With respect to the various harbours of Ku-kien-san, there are two or three adapted for shelter for small vessels, or even those drawing 18 feet, where a refit might be accomplished in still water in any monsoon, or where steam vessels might lie safely for the purpose of obtaining wood; and there are two other open bays, well-sheltered in the North-east monsoon, admirably adapted for watering; but there is not any other inducement to visit this island; all the dangers are well marked by the coral fringe which extends about a cable's length from the outline.

Of the dangers on the northern side of this group, it would not be prudent that any vessel should run the risk of being hampered by the shoals, and therefore should not come farther eastward, when beating up for Chusan, than to sight Chung-ohi island. The currents, as these islands are approached, press more southerly and easterly than those that are experienced on the coast of Formosa, and stronger breezes prevail as a vessel advances easterly. Indeed it blows incessantly at this western group.

Tai-pin-san Island.—The islands composing the Tai-pin-san or eastern division, are Tai-pin-san, Ye-ra-bu, Ku-ri-mah, Y-ki-mah, and Ohotake; the two islets, Mitsuna and Tarara, between Tai-pin-san and Pa-chung-san, are said to be a continuation of the reefs which extend to the N.E., North, and N.W. of Tai-pin-san, and on which H.M.S. *Providence* was lost in 1797. Captain Belcher, in H.M.S. *Samarang*, looked in vain for Ykima island.

Tai-pin-san island is surrounded by an extensive chain of coral reefs, upon which the islands of Ku-i-mah, Ye-ra-bu, Y-ki-mah, and Ohotake respectively are situated to the West, N.W., North, and N.E. The reefs do not extend far to the westward from Ku-ri-mah, unless in patches unconnected with the main belt. Off Ye-ra-bu they extend 3 or 4 miles, but close towards its north-western angle, where a deep water channel admits vessels within the belt up to Ohotake island and into the main harbour of Tai-pin-san. The reefs again spit out on the south-west angle of Y-ki-mah, and sweep northerly, as far as the eye can reach (from 100 feet elevation), round to east in continuous lines

* A dangerous shoal is reported as extending E. by N. and W. by S. 3 miles, and bearing N.W. by W., distant about 10 miles from Kumi.—*Horsburgh*, vol. 2, seventh edition, page 606.

On the evening of the 16th November, with Kumi island bearing E. by S. 3 leagues, saw heavy breakers ahead and on the lee bow, apparently on a dangerous shoal, extending E. by S. and W. by N., and bearing from Kumi, S.W. by W. 3½ leagues distant. Having dark cloudy weather with rain, and a heavy sea running, it was too late to send a boat to sound; but the breakers were seen continually from 4.30 p.m. until 6 p.m.—*Nautical Magazine* for 1844, page 244.

of breakers, edging in towards the south-east extremity of Ohotake. A high patch of rocks lies on the north-east angle of this outer belt, probably 10 miles from the northern point of Tai-pin-san.

Safe anchorage during the South-west monsoon might be found inside the reefs of Ohotake island, and also safe in the other monsoon; but the passage in or out at that season would be attended with risk, as sudden squalls, gales, and numerous patches beset the whole eastern side of Tai-pin-san. The southern coast line, from the south-east breaker patch to the south-west anchorage, does not offer many dangers, if a tolerable look-out be observed. The reefs do not extend more than half a cable from the shore, and generally less.

Directions.—Great caution is requisite in approaching the Meiaco-sima group from the north-east, east, or south, particularly with fresh breezes, and in the absence of the sun, by the aid of which reefs below water can be detected. They are, from their greenish hue, being covered by sea-weed, less distinct than at other places; and therefore, where they are not marked on the chart, it must not be presumed that the space is free from danger; the lead will not afford timely warning.

Approaching the group from the south-west, the island of Ku-kien-san, from its great height, will be first distinguished, presenting a round-backed summit closely clad with trees; knolls occur, elevated 2,000 feet above the sea, but as they seldom present the same appearance, owing to those nearer the coast eclipsing them, their accurate measurement could not be obtained; Adam peak, which may be noticed on the south-eastern outline, was determined to be 1,200 feet. As the island is neared, the high rocky basaltic islet of Chung-chi will show out when the western limit of Ku-kien-san bears N.E. by N., and working for this islet no danger can be feared, and should night befall, all the space on the north-west of Ku-kien-san up to the island of Kumi is safe.

The *Samarang* entered the group from the westward, passing within 2 miles of the southern reefs or breakers off Hasyokan or Sandy island, and standing on close hauled to the eastward, intending to make Ykima, and beat up from it to Tai-pin-san. On the morning following, not seeing Ykima (which is supposed not to exist), and the weather very boisterous, she stood on to the westward, to get under the lee of Pa-chung-san, and endeavour to reach some place of shelter. On nearing the latter island, she ran down the eastern and southern side, reaching the south-western extremity of its reef about 4 P.M.

Here was a barrier of breakers as far as the eye could reach from the mast-head, and apparently connecting Hasyokan island with the group of larger islands. An opening, however, was found into the reef, and after due examination the vessel was shot up into 13 fathoms, into Broughton bay, and warped into a snug position, where she was moored with just sufficient room to swing, the depths up to the coral ledges varying from 13 to 7 fathoms.

Broughton Bay.—The only directions which will assist the seaman in finding this snug little anchorage (safe only, however, during the North-east monsoon) are as follows:—

Approaching from the westward, as Chungchi is neared, Hasyokan or Sandy island will soon be seen, and avoiding the space included northerly of a line between Chungchi and it, a vessel may safely stand on, passing within one mile

of the southern limit of Hasyokan, and work for the south-west angle of Pa-chung-san, avoiding the reefs, which extend from it in a direct line N.E. and S.W. to Hasyokan. A high rock, named South rock, will point out the outer reefs of Pa-chung-san. The dangers between it and Pa-chung-san must be avoided by eye, the shoals being visible in 5 or 6 fathoms, and breaking upon those of 2 and 3 fathoms. The opening of the reef is in the heart of a deep indentation, just to the northward of the low south-west point of the island, and it has apparently a centre bar. The right-hand opening is the proper one.

From the eastward there are no dangers which are not clearly visible. After making the land, edge along the southern and eastern breakers until the abrupt turn of the breaker line is seen, at which moment the extreme south-west point of the bay will open. The breakers have regular soundings off them, but the course in will probably lead in 7, 8, or 9 fathoms, deepening to 14 or 15 off the inlet. As the breeze generally blows out, it will be advisable to send a boat to find clear ground off the opening, and shoot up and anchor. The vessel may then be warped in. But if merely intending a cursory visit, the outer anchorage appears good.

Port Haddington.—No safe anchorage is to be met with between Broughton bay and Port Haddington, which is on the west side of Pa-chung-san; although during the South-west monsoon there are several good bays on the northern side of the island, where anchorage might be found, but certainly not adapted for refit.*

When rounding the north-eastern extremity of Pa-chung-san, the two low coral islets of Mitsuma and Tarara ought to be avoided at night, but the dangers by day are clearly denoted by breakers. To the northward of these islets the ground is foul, and the *Samarang* was compelled to tack to the westward in 7 fathoms, at least 10 miles north of them.

A vessel bound from Broughton bay to Port Haddington, after rounding the north-east end of the Pa-chung-san breakers, and running to the westward the length of the island, should haul close round the north-west angle, and edge along southerly within about a mile of the breakers. The port will then open out, into which, with the prevailing breeze of the North-east monsoon, it will be necessary to beat. Off Hamilton point, the north point of the port, will be seen a remarkable little rocky hummock, upon which were left a very large pile of stones. The bottom, for more than a mile off the point, is rocky and dangerous; but as all the dangers of this port are visible from aloft, there is no risk with a proper look-out. The inner parts of the port have numerous shoals, but there is still abundance of excellent anchorage without, and where the vessel will be landlocked. The *Samarang* anchored about a mile or less within Hamilton point, in 10 fathoms, clear bottom.

From the westward, Port Haddington may be sought and reached more expeditiously by working up on the north-west side of Ku-kien-san, rounding Isaac island, and running down off the danger line from Melros point round the reef, which extends off Hamilton point one mile, and shoot into 15 fathoms. The chart exhibits several awkward patches, but a vessel which works decently

* There is a passage from Port Haddington into Broughton Bay, which was used by H.M. Ships *Lilly* and *Contest*, but abounding with coral reefs.—Commander J. W. Spenser, H.M. Sloop *Contest*, 1852.

can thread her way between them, if the sun be bright, as all the shoals may easily be traced from aloft.

Port Haddington to Tai-pin-san.—After quitting Port Haddington, the *Samarang* beat to the northward, and endeavoured to weather Mitsuma and Tarara. She had passed the breakers, leaving them about 5 miles under her lee, when finding the depths decrease to 7 fathoms, the vessel was immediately tacked. Captain Belcher strongly suspects that extensive banks or ledges of coral connect these islands (northerly) with Tai-pin-san.

Upon nearing Tai-pin-san, and having tacked twice, rather close to two off-lying patches, and obtaining soundings with 15 fathoms, a boat was sent ahead. Upon a given signal, for "danger discovered," the anchor was let go, and the vessel found to be in a secure berth in 12 fathoms, the boat being on the reefs. This turned out to be the only anchorage at Tai-pin-san. It is merely an indentation formed by the reefs connecting the western island Ku-ri-mah with Tai-pin-san, and is very unsafe, a very heavy sea tumbling in with a southerly wind. The observatory at Tai-pin-san (at the most convenient landing-place within the reefs, and the last rocky point towards the long sandy bay) is in lat. $24^{\circ} 43' 35''$ N., long. $125^{\circ} 17' 49''$ E.

LU-CHU OR LIU-KIU ISLANDS.

Kerama Islands.—To the westward of the south end of Okinawa sima are the Kerama islands, the Amakirrima of Basil Hall in 1816, and Kera sima of Siebold. The Kerama group consists of four islands, Zamami, Accar or Yakai of Siebold, Ghiruma, and Twkaschi, of which all but the last are very small.

Captain Mathison, of H.M.S. *Mariner*, in 1849, states, "that in the chart of the Kerama islands there are six islands marked with apparently clear passages between them; whereas, as well as could be judged, there must be a greater number, and all the spaces between them appear filled with reefs and breakers. There is a shoal lying between the east Kerama island and the south-east end of Okinawa sima, the breakers on which were clearly visible. Reefs also extend to the eastward about 5 or 6 miles from the north-east point of Kume sima, the island lying to the W.N.W., on one of which the ship *Elizabeth and Henry* was lost."

Napha-kiang Road.—Napha, on the south-west side of Okinawa sima, is the principal seaport of the island. The inner, or Junk harbour, carries a depth of 2 to 3 fathoms, and is sufficiently large to accommodate fifteen or twenty moderate-sized junks. The outer harbour is protected to the eastward and southward by the mainland, whilst in other directions it is surrounded by merely a chain of coral reefs, which answer as a tolerable breakwater against a swell from the northward or westward, but afford, of course, no shelter from the wind. The holding ground is so good, however, that a well-found vessel could here ride out almost any gale in safety.*

* See Plan of Napha-kiang Road, with views, No. 990; scale, $m = 3$ inches.

Abbey point, forming the south extremity of the road, may be known by its ragged outline, and by a small wooded eminence, called Wood hill, about $1\frac{1}{2}$ mile south of it. The mainland here falls back and forms a bay, which is sheltered by coral reefs extending to the northward from Abbey point; they are, however, disconnected, and between them and the point there is a channel sufficiently deep for the largest ship.

Nearly in the centre of this channel, outside withal, there is a coral bank named Blossom reef, having a good passage on either side of it. The south channel, between it and Abbey point, should be adopted with southerly winds and flood tides, and the Oar channel, between Blossom and Oar reefs, with the reverse. A reef extends from Abbey point to the south-west, and also to the northward. When off Abbey point, Kumi head, a rocky headland, will be seen about $1\frac{1}{2}$ mile north of the town; and upon the ridge of high land beyond it are three hummocks to the left of a cluster of trees. In the distance, a little to the left of these, is Mount Onnodake, in lat. $26^{\circ} 27' N$. A remarkable rock, which from its form has been named Capstan head, will next appear; and then to the northward of the town a rocky head, with a house upon its summit, called False Capstan head. At the back of Capstan head is Sheudi hill, upon which the upper town, the capital of Lu-chu, is built.

Water.—An abundance of water can always be obtained at the fountains in Junk river, where there is excellent landing for boats.

Buoys.—A black spar-buoy was moored on Blossom reef in 1854 half way between its eastern and western extreme; a red spar-buoy on the point of reef to the W.N.W. of Abbey point; and a white spar-buoy on the south-east extremity of Oar reef. Flags of corresponding colours were attached to all these buoys, affording good guides for the South and Oar channels. There are two large stakes on the reefs to the eastward and westward of the North channel, planted there by the natives, this being the channel mostly used by junks trading to the northward.

Directions.—Vessels bound from Hongkong to Great Lu-chu island during the South-west monsoon, should pass through the Formosa channel, giving Pinnacle, Craig, and Agincourt islands, off the north end of Formosa, a safe berth, as there are said to be reefs among them, and the currents are strong and variable in their vicinity. From thence a course should be shaped to pass to the northward of Hoa-pin-su, Tiau-su, and the Raleigh rock, after which haul to the eastward to sight Kume sima, and pass either to the northward or southward of it, Kurama, and the small islet near the latter, but *not* between them, as reefs are said to have been seen there. If to the northward, give a good berth* to Tu sima, a small rocky islet a quarter of a mile in extent, with a reef projecting $1\frac{1}{2}$ mile to the northward and about 4 cables in other directions; it is about 80 feet high, much broken, and lies N. by E. $\frac{1}{2}$ E. $13\frac{1}{2}$ miles from the northernmost peak of Kume sima, and W. $\frac{1}{2}$ N. from the centre of Agenhu. Pass to the southward of Agenhu, which will be readily recognized by its bold south point and wedge-shaped appearance. The Kerama group will be seen to the S.S.E., Lu-chu visible on the eastern horizon, and in a short time the Reef islets will heave in sight to the southward and eastward; these

* Lieutenant H. K. Stevens, U.S. Surveying Expedition, 1857.

latter are low and sandy, slightly covered with vegetation, and surrounded by coral reefs.

During the North-east monsoon, round the south end of Formosa and with the strong current setting to the northward, beat along its eastern shore to the northward and eastward. Pass between Hoa-pin-su and the Meiaco-sima group, and either to the northward or southward of Kume sima; if to the southward, a vessel may hug the northern shores of the Kerama islands, as it is believed there are no hidden dangers near them.

During the typhoon season, however, it is advisable to pass to the southward of Formosa and the Meiaco-sima group, in order to have plenty of sea room, in the event of encountering one of these storms. The passage to the southward of the Kerama islands is clear, with the exception of the Heber reef and Sandy island; the former is said to be a rock 6 feet out of water, surrounded by reefs; the latter to be just above water; and lying respectively W. by S. $\frac{1}{2}$ S. and W. by N. $\frac{1}{2}$ N. 7 miles from the south point of Great Lu-chu.

Vessels bound into the road from the southward may pass close round Cape Yakimu, the south extreme of Great Lu-chu, and sail along the western coast at the distance of 3 or $3\frac{1}{2}$ miles, leaving Heber reef and Sandy island to the westward.

Through South Channel.—There are three passages leading into Napha-kiang road, named the North, the Oar, and the South channel. To sail into the road by the South channel, between Blossom and Abbey reefs, having well opened Capstan head, haul towards Abbey reef, and bring the right-hand hummock about half a point eastward of Kumi head; this mark will lead through the South channel, in about 7 fathoms, over the tail of the Blossom reef. A vessel may now round Abbey reef tolerably close, and steer for the anchorage in 7 fathoms, about half a mile to the N.N.W. of False Capstan head.* Should the wind veer to the eastward in the passage between Blossom reef and Abbey point, with the above mark on, do not stand to the northward, unless the outer cluster of trees near the extremity of Wood hill is in line with, or open to the westward of Table hill, a square rocky headland to the southward of it. This mark clears also the tongue of Oar reef.

The best anchorage is in Barnpool, at the north-east part of the road, in 7 fathoms water, where a vessel may ride with great security. The outer anchorage would be dangerous with strong westerly gales. H.M.S. *Blossom* anchored there in 14 fathoms, muddy bottom, Abbey bluff bearing S.W. $\frac{1}{4}$ S., and Capstan head E. by S. $\frac{1}{4}$ S.

The entrance to Barnpool is between Barn head and the reef off Capstan head. In entering, do not approach Barn head nearer than to bring the north edge of Hole rock in one with the before-mentioned flat clump of trees on the hill south of Sheudi, until the point of the burying ground (Cemetery point)

* Care must be taken to avoid the Ingersoll patches, on which there is only a fathom water. They are inserted in the Admiralty plan of Napha-kiang road as discovered in 1837, and bear from Capstan head W. $\frac{1}{4}$ S., and from South fort N. by W. $\frac{1}{4}$ W. The French survey of 1846 by the officers of *La Sabine* does not show these rocks, but three patches having over them respectively 2, 4, and $4\frac{1}{2}$ fathoms. From the 2-fathoms patch Abbey point bears S. by W. $\frac{1}{4}$ W., and False Capstan head E. by S. $\frac{1}{4}$ S.; from the 4-fathoms patch Capstan head bears S. E. by E. $\frac{1}{4}$ E., and Abbey point S.W. $\frac{1}{4}$ W.; and from the $4\frac{1}{2}$ -fathoms patch Abbey point bears S.S.W. $\frac{1}{4}$ W., and False Capstan head S. E. by E. $\frac{1}{4}$ E.

is seen just clear of false Capstan head. Anchorage may be taken in any part of Barnpool.

The following directions for the South channel are by Lieutenant S. Bent, U.S.N., in 1853, to accompany a plan of Napha-kiang road, on which are marked two patches of only $2\frac{1}{2}$ and $1\frac{1}{2}$ fathoms water; the former, named Lexington reef, lying W. $\frac{1}{2}$ S., $1\frac{1}{2}$ mile from Abbey point; and the latter of $1\frac{1}{2}$ fathom, W.S.W. $1\frac{1}{2}$ mile from the point:—

The clearest approach to Napha-kiang road from the westward is by passing northward of the Kerama islands and sighting Agenhu island, which will be recognized by its wedge-shaped appearance; from thence steer a S.E. course for the road, passing on either side of the Reef islands, being careful, however, not to approach them too near on the western and southern sides, as the reefs below water in these directions are said to be more extensive than is shown on the chart.

After clearing the Reefs islands, steer for Wood hill on a S.S.E. bearing until getting upon the line of bearing for the south channel. This will lead well clear of the Blossom reef, yet not so far off but that the white tomb and clump of trees or bushes to the southward of Kumi head can be easily distinguished. An E. by N. $\frac{1}{2}$ N. course now until Abbey point is in one with outer trees will clear S.W. rock, when haul up for Kumi head, and select a berth about half a mile to the northward and westward of False Capstan head. This channel, being quite straight, is more desirable for a stranger entering the harbour than the Oar channel, which, though wider, has the disadvantage of its being necessary for a vessel to alter her course some four or five points, just when she is in the midst of reefs which are nearly all below the surface of the water.

Through Oar Channel.—If the wind be to the north-eastward it will be advisable to beat through the Oar channel, in preference to the South channel. To do this, bring False Capstan head in line with a flat cluster of trees on the ridge to the right of the first gap south of Sheudi. This will clear the north tongue of Blossom reef; but unless Table hill be open eastward of Wood hill, do not stand to the southward, but tack directly the water shoals to less than 12 fathoms, and endeavour to enter with the marks on. Having passed to the N.E. of Blossom reef, which will be known by Wood hill being seen to the right of Table hill, stand towards Abbey point as close as convenient, and on nearing Oar reef take care of a tongue which extends to the eastward of it and of the S.W. rock; and be careful to tack immediately the outer trees of Wood point open with Abbey point. In entering at either of the western channels, remember that the flood-tide sets to the northward, over Blossom reef, and the ebb to the southward.

A good mark to run through this channel is to bring the centre of the island in Junk harbour (known by the deep verdure of its vegetation) to fill the gap between the forts at the entrance of that harbour, and steer a S.E. $\frac{1}{2}$ E. course, until Capstan head bears East, when haul up E.N.E., and anchor as before directed.

Through North Channel.—The North channel into Napha-kiang road is much contracted by a range of detached rocks extending out from the reef on

the west side, and should not under ordinary circumstances be attempted by a stranger; as at high water the reefs are almost entirely covered, and it is difficult to judge of the vessel's exact position, unless familiar with the various localities and landmarks. To enter by this channel, bring a remarkable notch in the southern range of hills in line with a small hillock just eastward of False Capstan head, and stand in with this mark bearing S. by E. $\frac{1}{2}$ E. until Kumi head bears E. $\frac{1}{2}$ N., when open a little to the southward, so as to give the reef to the eastward a berth, and select an anchorage.

Sailing from Napha during the North-east monsoon, it will be better to pass round the south end of Great Lu-chu, in order to avoid beating through the Montgomery group, of which there is no reliable survey; they are said to consist of five islands, surrounded by reefs. But with a southerly wind and fine weather it will be to the advantage of a vessel bound to the Bonin islands to pass round the north end of Great Lu-chu, where she will feel the influence of the current, which will assist her to the eastward.

Tides.—It is high water, full and change, in Napha-kiang road, at 6h. 30m. and the rise is from 5 to $7\frac{1}{2}$ feet.

Barrow Bay is a deep inlet, bounded by shoals, near the middle of the eastern side of Great Lu-chu island. The following description* is by Lieutenant G. B. Balch, of the U.S. ship *Plymouth* :—

"A reef, of coral formation and bold to approach, commences 5 miles from the south point of Great Lu-chu, and extends in an unbroken chain, outside all the small islands, as far as the north-east point of Ichey island, with the exception of a narrow channel between the islet off the north-east end of Kyoko or Kudaka island, and the island of Taking. Ichey island forms the south-eastern point of Barrow bay, which is useless for all purposes of navigation, being exposed to the east winds and ocean swell. There is, however, secure anchorage in about 15 fathoms water on the western sides of Ichey, and of Hanadi, the next islet to the southward; this anchorage is the only place of shelter on the eastern coast of Great Lu-chu.

* From Nautical Remarks by the Officers of the United States Expedition to Japan, 1854.

CHAPTER IX.

ISLANDS NORTH OF THE LU-CHU GROUP, AND OFF THE SOUTH-EAST COAST OF NIPON.

VARIATION in 1861—Borodino islands, $1^{\circ} 50'$ W. ; Ladrone islands $2^{\circ} 40'$ E.
Bonin islands, $0^{\circ} 30'$ W. ; Islands off S.E. coast of Ningpo, $2^{\circ} 30'$ W.

ISLANDS NORTH OF THE LU-CHU GROUP.

To the northward of the Lu-chu group inhabited islands extend in a northerly direction, with many safe channels between them, as far as lat. $30^{\circ} 51'$ N. The mariner is, however, cautioned not to place too much dependence either on their configurations or positions, as shown on the chart of this part of the ocean, for they are by no means correct: they are from Japanese as collated by Siebold, and from detached surveys and corrections by English, French, and American navigators. The French corvette *La Sabine* examined them in the year 1846; their positions, to which we have given the native names and restored those of former explorers,* appear on the chart of her track to be as follows: †—

Yori Sima, or Julo of Basil Hall in 1816, centre, lat. $27^{\circ} 2'$ N., long. $128^{\circ} 25' 24''$ E.

Yekrabu Sima of Siebold; or Wukido of Basil Hall, south peak, lat. $27^{\circ} 21' N.$, long. $128^{\circ} 31' 34'' E.$, height 889 feet, (lat. $27^{\circ} 14' N.$, long. $128^{\circ} 33'$ by Collinson in 1845.)

Tok Sima of Siebold, or Crown island of Broughton, in 1797, highest peak lat. $27^{\circ} 44' N.$, long. $128^{\circ} 59' E.$; height, 2,461 feet. The northern peak is 2,034 feet above the sea; a village is built on its north-west face. This island is 14 miles long north and south, and 7 miles east and west.

All three of the above islands are well wooded, and appear to be inhabited.

Iwo Sima, or Sulphur island, in lat. $27^{\circ} 51' N.$, long. $128^{\circ} 14' E.$ ($128^{\circ} 19' E.$ by Collinson;) height, 541 feet; is a volcanic mountain still in action.

Oho Sima, or Harbour island, is the largest island lying between Great Lu-chu and Japan. It is about 30 miles in length, in a N.E. and S.W. direction, is high, well cultivated, and, from the number of villages seen along the coast, must contain a large population. There are two peaks upon its south end, 1,674 and 1,420 feet respectively above the sea.

* It is greatly to be regretted that navigators will not endeavour to ascertain the names of places as given by the natives; or, failing these, that they will not retain the names affixed to islands by the first discoverers. In the present case there are three and occasionally four names for each of the islands in this archipelago. So long as this practice is pursued, our charts will remain a mass of confusion.

† See Chart of islands between Formosa and Japan, No. 2,412.

This island was partially surveyed by the American squadron in 1856, and by their chart the outline of the coasts appears much broken and deeply indented with numerous bights, most of which are very bold. Wood and water are good and plentiful; but refreshments scarce. The inhabitants are timid and harmless. The north end of the island is high, and being connected with the main part of the island by a narrow low isthmus, it has the appearance, on some bearings, of being isolated. Foul ground appears to extend about 2½ miles N.E. by E. from the north end, and two rocks to rise from it, the northern of which is about 80 feet high. North extreme of the island, lat. 28, 31' 40" N., long. 129° 40' 12" E.; south extreme, lat. 28° 6' 30" N., long. 129° 22' E.

The south end of the island is separated from Katona sima by a narrow channel, in some places not more than half a mile wide. The *Vincennes* anchored within the eastern entrance of this channel, in a small bay formed at the north end of Katona sima. In entering the channel, an anchor should be ready to let go, in case of being set too near danger, for the entrance is narrow and the current strong.

Tides.—By three days' observations in Vincennes bay, at the north end of Katona sima, it was high water, full and change, at 7h. 30m.; and the rise and fall 5½ feet.

Kikai Sima, lying about 15 miles to the E.S.E. of the north end of Oho sima, is moderately high, about 7 miles in length, N.N.E. and S.S.W., and inhabited. The summit (867 feet high) is in lat. 28° 18' N., long. 129° 57½' E.

Germantown Reef.—The U.S. ship *Germantown*, on the 23d March 1859, when beating along the south-east side of Oho sima, struck on a coral reef, said to lie in lat. 28° 16' N., long. 129° 58' E. From the shoalest spot found, 6 feet, the highest terrace on Kikai sima bore N.E.½E. 6 or 7 miles. The reef is about a mile long in a N.N.E. and S.S.W. direction, and half a mile wide.

Another shoal spot was found lying North 2 miles from the centre of this reef, with apparently a clear passage between. Reefs were also seen from aloft, extending from one to two miles from the south-west and south-east points of Kikai sima.

Anchorage.—The *Germantown* anchored at 1½ mile from the shore in 25 fathoms, coral and shell, with the south-east point of Kikai sima bearing S.E. by E.½E., and the south-west point N.½E. The tides here set strong; the ebb from E.N.E. to N.E., and the flood from West to W.N.W. The strength was about 2 knots per hour, with an undertow of at least double that velocity.

Sandon Rock (Constantine of the French charts), about 20 feet high, resembling a small haycock, lies N. by E.½E., 12 miles from the north point of Oho sima.

The Linschoten Islands, or Cecille archipelago (so called in the French charts after Admiral Cecille, by whose directions the islands were examined in 1846), extend from lat. 28° 49' N. to 30° 6' N., and from long. 129° to 130° 3' E.

Yoko Sima, or Ogle island of Belcher in 1845, rising to the height of 1,623 feet above the sea, is an extinct volcano, the highest part of which is in

lat. $28^{\circ} 49' N.$, long. $128^{\circ} 59' E.$; there is a small islet about a mile to the northward of it.

Tokara Sima, 885 feet above the sea, is in lat. $29^{\circ} 8' N.$, long. $129^{\circ} 11' E.$

Simago, or Cooper group of Belcher, are four small islets, the highest of which, 738 feet above the sea, is in lat. $29^{\circ} 13' N.$, long. $129^{\circ} 19' E.$ The easternmost islet bears from it about $E.\frac{1}{4}N.$ 3 miles.

Akuisi Sima, or Samarang island of Belcher, 2,184 feet above the sea, is in lat. $29^{\circ} 27' N.$, long. $129^{\circ} 35' E.$; a small islet lies off its north-west face.

Suwa Sima, or Volcano island of Belcher, is an active volcano, 2,805 feet high, in lat. $29^{\circ} 38' N.$, long. $129^{\circ} 42' E.$

Fira Sima, or Disaster island of Belcher, lying to the W.N.W. of Suwa sima, is 879 feet high, and in lat. $29^{\circ} 41' N.$, long. $129^{\circ} 31' E.$

Naka Sima, or Pinnacle island of Belcher, is 3,287 feet above the sea; its peak is in lat. $29^{\circ} 53' N.$, long. $129^{\circ} 50' E.$

Hebi Sima, or St François Xavier island on the French chart, rises to the height of 1,820 feet. The peak is in lat. $29^{\circ} 55' N.$, long. $129^{\circ} 32' E.$ There is a small islet off its north-west face.

Kohobi Sima, or Forcade rock on French chart, 984 feet above the sea, is in lat. $29^{\circ} 53' N.$, long. $129^{\circ} 36' E.$

Kutsino Sima, or Alcène island on French chart, is 2,116 feet above the sea, and its highest part is in lat. $29^{\circ} 59' N.$, long. $129^{\circ} 55' E.$

Blake Reef, or Lapelin rocks on French chart, the highest islet on which is 90 feet above the sea, and in lat. $30^{\circ} 5' N.$, long. $130^{\circ} 3' E.$, consist of several distinct islets and rocks, extending about 3 miles in a N.E. and S.W. direction.

Yakuno Sima.—To the north-eastward of Blake reef is the island of Yakuno, the highest peak of which, Mount Motomi, 5,848 feet high, is in lat. $30^{\circ} 21' N.$, long. $130^{\circ} 29' E.$ The island, which has not been examined, is about $12\frac{1}{2}$ miles long north and south.

Tanaga Sima has never been examined. It appears to extend from lat. $30^{\circ} 22'$ to $30^{\circ} 43' N.$, and from long. $130^{\circ} 54'$ to $131^{\circ} 5' E.$

Seriphos or Omuru rock is marked in the French chart as under water; it is in lat. $30^{\circ} 44' N.$, long. $130^{\circ} 45' E.$

Yerabu Sima, or Julie island on French chart, is an active volcano, rising to the height of 2,067 feet above the sea. Its highest peak is in lat. $30^{\circ} 27' N.$, long. $130^{\circ} 11' E.$ The island is about 6 miles long, in an E.S.E. and W.N.W. direction; its greatest breadth is 3 miles.

Take Sima, or Apollon island on French chart, is high, and about 2 miles in circumference; its centre is in lat. $30^{\circ} 48' N.$, long. $130^{\circ} 24' E.$

Iwoga Sima, or Volcano island on French chart, is an active volcano; its highest peak, which rises 2,345 feet above the sea, is in lat. $30^{\circ} 42' N.$, long. $130^{\circ} 17' E.$

Powhatan Reef.—This dangerous reef, in lat. $30^{\circ} 41' N.$, long. $130^{\circ} 19' E.$, was discovered by the U.S.S. *Powhatan* in January 1860. From the centre rock, which is about 18 feet above the sea, the south-west point of Iwoga sima bore N.W., the east point $N.\frac{1}{4}W.$, and the east point of Take sima N.E. $\frac{1}{4}N.$

ISLANDS OFF SOUTH-EAST COAST OF NIPON.

Other rocks were seen awash, or a few feet above water, stretching out about three-quarters of a mile from the centre rock. Some reefs were also observed extending about three-quarters of a mile from the eastern points of Iwoga sima; and a rocky spit about a quarter of a mile from the east point of Take sima.

Trio Rocks are three distinct islets, of about an equal height; the centre islet, which is 223 feet above the sea, is in lat. $30^{\circ} 45' N.$, long. $130^{\circ} 5' E.$

Kuro Sima, or St Clair island on French chart, rises to the height of 2,132 feet; its centre is in lat. $30^{\circ} 50' N.$, long. $129^{\circ} 55' E.$

Ingersoll Rocks.—The Ingersoll, Morrison, or Larne rocks, eight in number, extend in a N.E. and S.W. direction about $5\frac{1}{2}$ miles; the highest, 446 feet above the sea, is in lat. $30^{\circ} 51' N.$, long. $129^{\circ} 26' E.$

ISLANDS OFF SOUTH-EAST COAST OF NIPON.

Lot's Wife, or Black rock, in lat. $29^{\circ} 47' N.$, long. $140^{\circ} 22\frac{1}{2}' E.$, lying off the south-east coast of Nipon, is a tall pinnacle rising about 300 feet above the sea; in clear weather it can be seen at a distance of 25 miles, and bears a remarkable resemblance to a ship under all sail. A cast of the lead within 8 miles of this rock gave no soundings with 160 fathoms of line.

Ponafidin, or St Peter island, was discovered in 1820 by Lieutenant Ponafidin of the Russian Navy, and named by him Three Hills island, from its having apparently three hummocks. It was seen by one of the vessels of the United States squadron in 1853, and its position is given as lat. $30^{\circ} 33' N.$, long. $140^{\circ} 15' E.$

Smith Island.—H.M.S. *Tribune*, 18th January 1859, passed a high pinnacle-looking rock, in lat. $31^{\circ} 18' N.$, long. $139^{\circ} 50' E.$, about three-quarters of a mile in circumference, with heavy breakers extending apparently a quarter of a mile from it, and a small rock close to its north side. As this rock is nearly in the same position as that assigned to Smith island on the chart, there is every reason to believe they are identical.

Bayonnaise, or King William isle, in lat. $32^{\circ} 0' 40" N.$, long. $140^{\circ} 0' E.$, forms a curve a cable long north and south, its northern summit rising 20 feet; several rocks extend off it a quarter of a mile to the north-west.*

Onanga Sima, or South isle, in lat. $32^{\circ} 30' N.$, long. $139^{\circ} 50' E.$, is 3 miles long, and is visible 36 miles off in clear weather. Its coasts are steep, and the only landing-place is on the east side, where there is a rock level with the water at a little distance from the land. Onanga is inhabited and cultivated on the north and north-west sides. Cheyne, who saw the isle in July 1853, places it 7' farther north and 12' farther west.

Fatsia Island, 12 miles long, N.W. and S.E., has the appearance of two

* See Chart of Nipon Island, Kiusiu and Sikok, and part of the Coast of Korea, No. 2,347, scale, $d = 23$ inches; corrected to 1861,

islands joined by a low plain, while a high islet near its north end makes it look like three islands on making it from seaward, whence it may be seen from 40 to 50 miles. It is inhabited and well cultivated. Lat. (of centre) $33^{\circ} 6' N.$, long. $139^{\circ} 43' E.$

Broughton Rock, in lat. $33^{\circ} 42' N.$, long. $139^{\circ} 17' E.$, is about 50 feet high, flat at the top, with steep slopes, except on one side, where it presents a broken and precipitous face.

Meac Sima and **Mecoura** are two high and bold islands; the first in lat. $34^{\circ} 6' N.$, long. $139^{\circ} 29' E.$, and Mecoura in $33^{\circ} 54' N.$, $139^{\circ} 35' E.$; the latter lies about 17 miles to the north-east of Broughton rock. Mecoura is called Prince island and Meac sima Volcano island in former charts.

There is a cluster of rocks about $2\frac{1}{2}$ miles to the south-west of Meac sima, and Broughton says, "there are, in addition, some black rocks 2 or 3 miles from the eastern point of the island."

Redfield Rocks.—This dangerous cluster of small, sharp-pointed rocks, from 15 to 20 feet above water, lies about 20 miles to the south-west of Kozu sima, in lat. $33^{\circ} 56' 50'' N.$, long. $138^{\circ} 49' E.$ They are said* to rise from the north-east extremity of a reef which extends from them 2 miles in a south-westerly direction, and only breaks in bad weather. A vessel, therefore, in passing westward of them in fine weather should give the tail of the reef a good berth, as it might not then be marked by breakers.

Kozu Sima, in lat. $34^{\circ} 13\frac{1}{2}' N.$, long. $139^{\circ} 8' E.$ (centre), is the most south-western of the chain of islands fronting the gulf of Yedo. It is $3\frac{1}{2}$ miles long N.E. and S.W., and may be recognized by a remarkable white cliff on its western side, and a white patch on its summit, to the northward of the cliff. It has an elevation of 2,000 feet above the sea. There is a safe channel 15 miles wide between Kozu sima and Meac sima.

About 2 miles to the southward of the south-west point of Kozu sima are the Brood rocks, which should be given a safe berth, as their jagged appearance would lead to the belief that there are many hidden dangers in their immediate neighbourhood.

Sikini Sima is low, with a small islet off its north end. It is $1\frac{1}{2}$ mile long. N.N.E. and S.S.W., and lies 5 miles to the north-east of Kozu sima. One of the vessels of the American squadron passed between these islands and saw no danger; there is therefore reason to believe that the channel is safe.

Nee Sima is about $1\frac{1}{2}$ mile to the north-east of Sikini, and from its broken outline appears from a distance as several islands. Its extent is 5 miles, north and south, and its most elevated part is 1,490 feet above the sea. There is a small low islet a short distance to the south-east.

Utoma is a conical islet, 660 feet high, lying N. $\frac{1}{2}$ E. about $2\frac{1}{2}$ miles from Nee sima; it has detached rocks lying near its shores.

To Sima, bearing N. $\frac{1}{2}$ W. 2 miles from Utoma, is one mile in diameter, pyramidal-shaped, and its summit 1,730 feet above the sea.

Oho Sima, or Vries island, the largest and most northern of the chain fronting the gulf of Yedo, is 10 miles to the N.N.E. of To sima, its south-eastern

* Edward H. Hills, Master of H.M.S. *Highflyer*, 1858.

point being in lat. $34^{\circ} 39\frac{1}{2}'$ N., long. $139^{\circ} 28'$ E. It has an active volcano near its summit, which rises 2,530 feet above the sea. The slopes of the mountain are extensively cultivated, and dotted with towns and villages. The vapour which sometimes ascends from the volcano, and condenses in masses on the mountain, renders the island a good land-fall for vessels approaching this part of the coast of Nipon. The passage between it and To sima is believed to be free from hidden danger.

Caution.—The current sets strongly to the north-east through the various passages between the above islands, and this should be remembered, particularly in bad weather. In their vicinity, in fact throughout the path of the current from the south end of Formosa to Behring strait, constant heavy tide rips will be encountered, which, in light winds, frequently render a vessel for a time unmanageable.

Portsmouth Breakers.—Captain Foote of the U.S.S. *Portsmouth* reports* that he nearly lost his vessel on a reef of rocks about 35 miles in a south-westerly direction from Simoda, and 13 miles from the nearest land.

In steering † for the Gulf of Yedo, the *Furious* passed inside the above position assigned to these breakers, and although the water changed its colour very decidedly, no indication of danger was seen, nor was any bottom obtained with 13 fathoms. From the mast-head the line of discolouration could be traced from the shore to as far as could be seen seaward. It was from 4 to 6 miles wide in an E.N.E. and W.S.W. direction where the *Furious* crossed; and on emerging from it into blue water, the boundary line was as plainly marked as on entering it from the westward.

The direction in which this discoloured water extended, S.E. and N.W., and its extent, 6 miles between the vessel and the shore, and about the same distance seaward, in all 13 miles, would lead to the supposition that it terminated in the Portsmouth breakers. Vessels, therefore, bound either way should be well assured of their reckoning when passing this locality; a good look-out should also be kept, the lead constantly hove, and every precaution taken when nearing the position given for these breakers.‡

Winds and Weather.—The South-west monsoon sweeps over the Lu-chu group, and reaches the southern shores of the Japan and Bonin islands. At Napha, Lu-chu, during the visit of the United States squadron, in 1854, it prevailed steadily in May and June, and veered to the southward and eastward in July. In August the wind was changeable, and blew at times quite strong, with squally, rainy weather.

The North-east monsoon set in about the 1st September, and continued until the departure of the squadron, on the 7th February, being, however, interrupted during the winter months by fresh gales from the northward and westward, which were generally accompanied with heavy rain.

At the Bonin islands, in April, the wind was variable; in June, it was from the southward and westward; and in October, from the northward and east-

* Shipping Gazette, 30th March, 1858.

† Stephen Court, Master of H.M.S. *Furious*, 1858.

‡ In page 209, it is stated that where whirls and eddies are produced by the inequalities of the bed of the Japan current, strong tide rips are encountered, often resembling heavy breakers on reefs or shoals.

ward. The passage from Lu-chu to these islands, in October, was exceedingly boisterous.

The Mariana islands lie in the region of the northern tropic, and consequently in that of the north-east trades. But this is not the prevalent wind. The N.E. and S.W. monsoons, which are met with in the China Sea and on the coasts of China, extend as far as the Mariana islands, and sometimes even beyond them; so that the limits between the monsoons and the trade winds must be found near this archipelago. The months of July to November are the season of bad weather, storms, thunder, and rain.* In December, January, and February the weather is variable. March, April, May, and June are the finest months; the wind is then from East and N.E. The winds blow strongest in August, September, October, and November; their direction at these periods is from N.W. to S.W. by W., sometimes from South and S.E., but in general more between North and West than from North itself. Hurricanes are rare, but are not unknown; there had not been one of these scourges for seven years prior to the *Uranie's* visit. Earthquakes are frequent.

* Voyage of the French corvette *Uranie* in 1819, by M. Louis de Freycinet.

SAILING DIRECTIONS FOR THE JAPAN ISLANDS.

VARIATION in 1861, 2° 30' W.

CHAPTER X.

The empire of Japan is composed of three large islands, Kiusiu, Sikok, and Nipon, and numerous smaller islands. Nipon, the largest and most important of the group, and that which gives name to the whole, is more than 700 miles in length in a N.E. and S.W. direction, and its breadth varies from 50 to 150 miles. South of Nipon, and separated from it by a narrow channel, is the island of Kiusiu, about 180 miles in length, north and south, and about 80 in average breadth.

Lying north-east of Kiusiu, and eastward of the south extreme of Nipon, is the island of Sikok, about 130 miles in length, N.E. and S.W., and 60 in breadth. It is separated from Nipon by a long strait, named the Misima Nada, and from Kiusiu by the Boungo channel. The island Kiusiu, Sikok, and the western end of Nipon form a basin or interior sea named Suwo Nada, or the sea of Suwo. This sea has many islands, and according to the Japanese the largest ships may navigate it. It is separated from the Pacific ocean by the island of Sikok, and communicated with by the Kino channel to the east, and the Boungo channel to the west, and with the Japan sea by the Fiki channel between the islands of Notch and Wilson. North of Nipon, and separated from it by the strait of Tsugar, is the large island of Yezo, a conquest and colony of Japan. The southern portion of the island of Saghalin, or *Karafó*, which is separated from Yezo by Lapérouse strait and the three southernmost of the Kuril islands—Runashir, Iturup, and Urup—belong to Japan.

The Japanese islands are exceedingly broken and mountainous, with numerous peaks rising to a considerable height. Fuziyama is the highest; it is in about lat. 35° 36½' N., long. 138° 48¼' E., about 12,450 feet above the level of the sea, and an excellent landmark for vessels approaching the Gulf of Yedo.

Winds.—During the stay of the American squadron in Japan, from February to July 1854, the weather was generally fine, but occasionally interrupted by strong winds and heavy rain. Northerly winds were prevalent in February, March, and April, south-westerly winds in May and July, and variable winds in June. The gales came on suddenly from the south-west, with a low barometer, and continuing for a short time, hauled round to the northward and westward, and moderated. There were no easterly gales; in fact the wind was rarely from that quarter, except when veering round from the northward

(as it invariably did) by the east to the southward and westward. In the bay of Yedo the mean temperature for the month of February was 46° Fahr. There were but few fogs; they commenced at Hakodadi about the 1st June, but did not extend as far southward as Simoda.

In the months of August and September 1858—the period H.M.S. *Furious* remained in Yedo bay—heavy gales from the E.N.E., shifting round to the S.W. and increasing in force, were frequent. Winds from West, round northerly to E.N.E., generally brought fine weather, and rain when between S.E. and S.W.

From information obtained at Yedo, it appears the prevailing winds throughout the year are to the northward of East and West, and that those to the southward generally bring bad weather; always, however, causing the barometer to fall in sufficient time to enable a vessel to obtain a 60 or 80 miles offing, should she be near the coast.

Strong winds from the S.E. are generally accompanied with thick weather and rain. At such a period it is recommended that a vessel bound to the westward from Yedo should run through the chain of islands to the southward of Van Diemen strait, instead of passing through the strait; for by taking this latter route, and not making sufficient allowance for north-easterly current, she would in all probability find herself embayed on a lee shore to the northward of Cape Chichakoff, and possibly off Cape D'Anville.

During H.M.S. *Saracen's* survey of the Strait of Tsugar, May, June, July, and August 1855, the prevailing winds were from the South, with much fine clear weather. The wind was less frequent from the N.W. than any other quarter. Dense fogs prevailed in May and June; after that period they were comparatively rare.

The wind in shifting usually followed the course of the sun. After a few days of light southerly wind and fine weather it freshened, and veered to the westward, accompanied by fine clear and cold weather. At N.W. it usually died away, or flew round suddenly to the eastward; in the latter case it was always followed by a dense fog or a gale; the weather getting fine again as the wind veered to the southward.

The *Kuro-siwo* or *Japan Stream* is an immense oceanic current, which from observations appears to have its origin in the great equatorial current of the Pacific, from which it is separated by the south end of Formosa. The larger portion of this current, when it reaches the point just named, passes off into the China Sea; while the other part is deflected to the northward along the eastern coast of Formosa, until reaching the parallel of 26° N., when it bears off to the northward and eastward, washing the whole south-east coasts of Japan, as far as the Strait of Tsugar, and increasing in strength as it advances.

Near its origin the stream is contracted, and is usually confined between Formosa and the *Meiaco-sima* group, with a width of nearly 100 miles; but to the northward of the latter it rapidly expands on its southern limit, and reaches the *Luchu* and *Bonin* islands, attaining a width to the northward of the latter of about 400 miles. Its average maximum temperature is 86°, which differs about 12° from that of the ocean, due to the latitude. The north-western edge of

the stream is strongly marked by a sudden thermal change in the water of from 10° to 20° ; but the southern and eastern limit is less distinctly defined, there being a gradual thermal approximation of the air and water.

Along the borders of the stream, where it chafes against the counter currents and torpid waters of the ocean, as also in its midst, where whirls and eddies are produced by islands and the inequalities in its bed, strong tide rips are encountered, often resembling heavy breakers on reefs or shoals. Its average velocity between the south end of Formosa and Tsugar strait has been found to be from 35 to 46 miles in 24 hours.

This current is, however, much influenced, both in direction and velocity, by local causes. It is sometimes entirely checked for a day by a north-east wind; when it may be again expected to resume its former course, and possibly run with greater rapidity than usual for one or two days. On one occasion, off the Gulf of Yedo, its maximum strength is recorded as high as 72, 74, and 80 miles respectively, on three successive days.

To the northward of lat. 40° N., in long. 143° E., there is a cold counter current intervening between this stream and the south coast of Yezo, as shown by the sudden thermal change in the water from 16° to 20° , which it is believed sets to the westward through the Strait of Tsugar.

Van Diemen Strait.—The islands on the south side of this strait, and the south end of Kiusiu on the north side are high, and apparently of safe approach. On the north side is a large and deep bay, of which Cape Chichakoff forms the south-east point, and a remarkable mountain, named Kaimondaki 開門山 or Horner peak, the north-west point. This mountain, with a similar mountain on Iwoga sima, on the southern side of the strait, both of great height, form two conspicuous land-marks when approaching the strait from the westward. The whole of the above bay, excepting to the north, is surrounded by high mountains, covered with verdure. At its head is the town of Kago sima and the island of Sakara.

Cape Chichakoff is about 500 feet high, and has three remarkable rocks lying close off it, one of which, bearing West from the extreme of the cape, is of a sugarloaf shape, and perforated at its base. These, with a small island lying south about 2 cables, and another East about a quarter of a mile from the pitch of the cape, will enable the seaman at all times to recognize this headland with certainty.

Soundings, from 25 to 40 fathoms, were obtained by H.M.S. *Roebeck*, in 1859, between the parallels of 31° and 32° N., and the meridians of 124° and 126° E.; and 8 fathoms in Van Diemen strait, about $2\frac{1}{2}$ miles off Cape Chichakoff, the perforated rock of that cape bearing N. $\frac{1}{4}$ E.

Anchorage.—In Van Diemen strait, H.M.S. *Furious*, in 1858, experienced a strong breeze from the N.E., and being accompanied with a falling barometer, an anchorage was sought for under and to the westward of Cape Chichakoff, where the chart by Siebold appears to point out a small harbour. In searching for this anchorage, soundings were first obtained in 30 fathoms, with the cape bearing S.S.E., and the vessel eventually came to in 13 fathoms, abreast a small village near the centre of the first bay westward of the cape, with the extreme of the cape bearing S.S.W., Horner peak N.W., and north-

west extreme of the same bay N.N.W.; here she was well sheltered for thirty-six hours, with the wind steady between E.N.E. and E.S.E., although it was blowing heavily outside, as evinced by the heavy gusts off the land and low barometer; but on its veering to the southward of S.S.E. the bay became too exposed from that quarter, which rendered it advisable to weigh and proceed to sea.

There was no opportunity of verifying the existence of the above harbour; but there was every appearance of a small but well-sheltered inlet in the north-east corner of the bay in which the *Furious* anchored, which, if examined, might prove of great service to vessels meeting with adverse winds, when bound eastward through Van Diemen strait.

Ohosaka Bay, formed at the south-west part of Nipon, is 35 miles deep, N.E. and S.W., and is bounded to the south by a peninsula, and to the west by the large, mountainous, and wooded island of Awadji. The shores of the bay are in general high and thickly wooded; in some places, however, they are low and sandy. Ohosaka stands on the north-east shore of the bay, on the left bank of the Sedogawa, a small stream which has its source in the lake Oity. At the river's mouth are two large towers; the position of the tower before the city is lat. $34^{\circ} 41' 38''$ N., long. $135^{\circ} 29' 27''$ E. The depth in the mouth of the river is sufficient to allow boats to enter to procure water.

Two small islands, lying between Awadji and the peninsula, divide the entrance of the bay into three straits, of which the widest is the western. The centre strait, between the islands, is narrow and rocky. The eastern or Dzinossotto strait, is between Dsino island and the peninsula. In approaching this latter strait from the southward, through the Kino channel, a mountainous and wooded headland, with a small summer-house on its summit, will be first seen on the eastern shore. Steer for this headland on a North bearing, and pass it at half a mile distant; a reef extends 3 cables from it. Farther, in a small bay running into the peninsula, is the town of Kada, the position of which is lat. $34^{\circ} 14' 28''$ N., long. $135^{\circ} 4' 20''$ E. After passing this reef, a N. by E. course will lead into the middle of the strait, from the points on both sides of which rocky reefs extend $1\frac{1}{2}$ cable. The depth obtained in the strait was 16 fathoms, over a bottom of sand and small shells.

From this strait the bay is quite clear to the city of Ohosaka, the course to which is N.E. There is anchorage on either side of the bay; the depths are less on the eastern than on the western shore, where there is anchorage only in a few small bays. Within 2 miles of the city the water shoals, and vessels should not go into less than 4 fathoms, for there is sometimes a heavy swell. The rise of tide is about $2\frac{1}{2}$ feet.

Port Hlogo is in the north-west part of Ohosaka bay, abreast of Ohosaka, from which it is distant 10 miles.

Enora Bay, on the eastern shore of Toötomi gulf and in lat. $35^{\circ} 10' N.$, long. $139^{\circ} 3' 15'' E.$, is 9 cables long, north and south, and 6 cables deep. *Ara sima*, a wooded island affording shelter from westerly winds, lies off the south point of entrance, and there is a small monument on the north point. The soundings in the bay are deep, 20 to 30 fathoms, and it is open to the west,

but there is good shelter from all winds in a small bay in its northern part, where the depth is 13 fathoms over a bottom of fine sand.*

In steering for this small bay, keep midway between its western shore and the cliffs on the eastern. A town stands on the western shore. There is a river in Enora bay, but as water is obtained from it with difficulty on account of its shallowness, it is best to procure it from the town wells. The rise and fall of tide is about 4 feet.

Heda Bay, in lat. $34^{\circ} 58' 11''$ N, long. $138^{\circ} 58' 15''$ E., is 6 cables in extent north and south, and $5\frac{1}{2}$ cables east and west, and carries a depth of 8 to 22 fathoms over a bottom of fine sand. It is sheltered on all sides by high mountains. There is a village in a valley. Six rivers empty themselves into the bay, but it is preferable to obtain water from the wells.

The entrance into this bay is a quarter of a mile wide and open to the N.W. It is to the northward of a low and sandy spit extending half a mile in a northerly direction from the southern shore, and covered with wood. The rise of tide is $5\frac{1}{2}$ feet.

Arari Bay, sheltered also from all winds, is in lat. $34^{\circ} 50'$ N., long. $138^{\circ} 56' 25''$ E. Its extent is 4 cables north and south, and 2 cables east and west, and the depths are 6 to 12 fathoms over fine sand. The shores of the bay are mountainous. Water may be conveniently obtained from the village on the eastern shore; fish is plentiful.

The entrance is open to the N.W.; in entering keep in mid-channel, and when a small island opens, steer between it and the sandy point to the S.W. After rounding this point, the course is South for the middle of the bay, where the depth is 7 fathoms.

Tago Bay, in lat. $34^{\circ} 47' 3''$ N., long. $138^{\circ} 55\frac{1}{2}'$ E., is 4 cables in extent north and south, and half a mile wide, is sheltered from all winds, and carries a depth of 12 to 20 fathoms, soft mud bottom. There is a small town here, and water can be obtained from the wells. Fish and vegetables can be procured.

In steering for the entrance of this bay, which is also open to the N.W., two islands (lying half a mile W.N.W. from the south point of entrance) will be seen, with rocks and breakers extending to the southward from them. Pass to the northward of these islands, between them and the mainland. After passing about a cable to the northward of another island lying off the south point of entrance, steer S.E. for the middle of the bay, where there is anchorage in 13 fathoms.

Directions.—These four bays just described will serve as a refuge from S.W. winds, which cause a great swell in Toōtomi gulf. Their coasts are wooded and mountainous, attaining the height of 1,000 feet. The entrances must be approached fearlessly, for the high coast conceals them, and the bays only open when within a mile.

The whole of the western coast of the Idsu peninsula is shelving, and may be safely approached to 2 miles; islands lie off it, but not beyond the distance of a mile. The current is stronger along the shores than in the middle of the gulf.

* The description of Enora, Heda, Arari, and Tago bays is by Lieut. Elkin of the Russian frigate *Diana*, 1853-55. See Plans of these Bays, scale, $m = 1\frac{1}{2}$ inches, on Chart of Nipon Island, No. 2,347, corrected to 1861.

Simoda Harbour is near the south-eastern extremity of the peninsula of Idsu, which terminates at the cape of that name in lat. $34^{\circ} 36' N.$, long. $138^{\circ} 50' 35'' E.$ Cape Idsu will be recognized by a conspicuous white cliff a short distance to the north-west of it, and a conical rocky peak a few miles farther to the northward and westward, forming the south-western extreme of the peninsula. To the northward of the harbour a high ridge intersects the peninsula; and south of this, all the way to the cape, it is broken by innumerable peaks of less elevation. To the E.S.E. of the cape, distant half a mile, is a rock about 20 feet above water; and a similar rock lies a third of a mile off Macane point.*

Vandalia bluff, on the east side of the entrance to the harbour, will be known by a grove of pine trees on the summit of the bluff, and the village of Susaki, which is about a third of the way between it and Cape Diamond. This cape is a rocky islet, lying immediately off a point at $1\frac{1}{2}$ mile eastward of the entrance, and to the northward of it is the bay of Sirahama, which is deep, and as it has several sand beaches, it may be mistaken for Simoda harbour; but as it is approached, Cape Diamond will shut in the Ucona rocks and Rock island to the southward, while in Simoda road they are visible from all points. The town of Simoda stands on the west shore of the harbour, and Kakisaki village on the west. There is good landing for boats in Simoda creek, and also at the village.

Rock Island, about 120 feet high and a third of a mile in length, with precipitous shores and an uneven outline, bears E. by S. $\frac{1}{2}$ S. about 5 miles from Cape Idsu; it has a thick matting of grass, weeds, moss, &c., on its summit. Between this rock and the mainland are a number of rocks awash and above water, among which the junks freely pass; but a vessel should not attempt to run inside Rock island, unless in case of urgent necessity, particularly as the north-easterly current, which sweeps along this coast, seems to be at this point capricious both in direction and velocity.

From the summit of this island overfalls were seen, bearing N. $\frac{1}{2}$ W., distant a mile or a mile and a half. These may have been caused by a rock or reef. An attempt was made to find it, but the strong current and fresh wind prevented a satisfactory examination. The Japanese fishermen, however, deny the existence of any such danger.

Ucona Rocks, two in number, though they generally appear as one, bear N. by W., distant 2 miles from Rock island; the largest is about 70 feet high. Between these and the island the current was found setting about E.N.E. fully 4 miles an hour.

Centre Island lies nearly in the middle of Simoda harbour, and bears N. $\frac{1}{2}$ E. $5\frac{1}{2}$ miles from Rock island, and N. by E. $\frac{1}{2}$ E. $3\frac{1}{2}$ miles from the Ucona rocks. It is high, conical, covered with trees, and a cave passes entirely through it.

Buisaco islet, a quarter of a mile N.N.E. from Centre island, is about 40 feet high, and covered with trees and shrubs.

Southampton and Supply Rocks.—There are but two hidden dangers in Simoda harbour; the first is Southampton rock, which is in mid-channel

* See Plan of Simoda Harbour, with views, No. 2,635; scale, 1" = 3.8 inches

S. by E. $\frac{1}{2}$ E. 2 cables from south point of Centre island, and N. $\frac{1}{2}$ W. from Vandalia bluff, about three-fourths of the way between it and Centre; it is about 25 feet in diameter, has 2 fathoms water on it, and is marked by a *white* spar-buoy. The other is the Supply rock, bearing S. by W. a short distance from Buisaco or Misana islet; it is a sharp rock, with 11 feet water on it, and is marked by a *red* spar-buoy.

Tides.—It is high water, full and change, in Simoda harbour at 5h. 0m. extreme rise of tide, $5\frac{1}{2}$ feet; mean rise, 3 feet.

Directions.—In navigating the south-eastern coast of Japan, after passing Cape Chichakoff, in Van Diemen strait, if the weather be thick, the vessel's position should be well ascertained before she is hauled to the north-eastward, as the land appears to trend in an E. by N. direction for about 10 miles from the pitch of the cape, instead of N.E., as shown in the present charts. It should also be borne in mind that, as far as our knowledge extends, the current on this coast generally runs to the E.N.E. at the rate of 40 miles a day; it may, however, be entirely checked for twenty-four hours by a north-east wind, when it may be again expected to resume its former course, and possibly run with greater rapidity than usual for one or two days.

Vessels therefore bound to the eastward must allow for this current, and should keep not more than 30 miles off shore, so as to be enabled, if necessary, to verify their reckoning by sighting the land. The positions of the headlands appear to be sufficiently correct for navigation, but until this coast has been more correctly examined, the mariner is warned not to place implicit reliance on any chart, and to be prepared to meet with unknown dangers. In approaching the Gulf of Yedo, the remarkable high mountain of Fuzi-yama, so different in form from any other land in its vicinity, cannot fail to be of great service in directing vessels either to Simoda or Yedo; Cape Idsu is in line with it when bearing N. $\frac{1}{2}$ E.

Vessels bound to Simoda harbour from the southward and westward should make Cape Idsu, from which Rock island bears E. by S. $\frac{1}{2}$ S., distant about 5 miles; and if the weather is at all clear, the chain of islands off the Gulf of Yedo will at the same time be plainly visible. Omae saki, the west point of entrance to Toötomi gulf, cannot be mistaken for Cape Idsu, the former being low, with a sandy beach, and low sand-hills, with occasional patches of trees, extending 30 or 40 miles to the westward; whereas the cape is high and rocky, and its summit generally hidden in the clouds. Rock island being low, unless the weather is clear, will not be seen until long after the cape and Volcano island.

Giving Rock island a berth of a mile, the harbour will be in full view, bearing N. $\frac{1}{2}$ W. distance 5 miles. Standing in from this island, a vessel will probably pass through a number of tide rips, but no soundings will be obtained with the hand-lead until near the entrance of the harbour, when the depth will be 14 to 27 fathoms. Should the wind be from the northward and fresh, she should anchor at the mouth of the harbour until it lulls or shifts, or until she can conveniently warp in, as it is usually fluky and always baffling.

Approaching from the northward and eastward, a vessel can pass on either side of Oho sima or Vries island, from the centre of which Cape Diamond bears W. by S. $\frac{1}{2}$ S., distant about 20 miles. Between Oho sima and Simoda, no

dangers are known to exist; but the north-easterly current must be borne constantly in mind, particularly at night and in thick weather. Its general strength is from 2 to 3 knots per hour; but as this, as well as its direction, is much influenced by the local winds, headlands, islands, &c., neither can be relied upon.

Should Oho sima be obscured by thick weather, before reaching Cape Diamond endeavour to sight Rock island, for there are no conspicuous objects on the mainland by which a stranger can recognize the harbour at a distance, and the shore appears as one unbroken line. To the westward of the harbour there are several sand beaches, and three or four sand-banks; these can be plainly discerned when within 6 or 8 miles, and are good landmarks.

Approaching from the southward and eastward, pass westward of Kozu sima, from which the harbour bears N. by W. $\frac{1}{2}$ W. distant about 26 miles.

In the outer road, or mouth of the harbour, a disagreeable swell is sometimes experienced; but inside the Southampton rock and Centre island vessels are well sheltered, and the water comparatively smooth. Moor with open hawse to the south-west. The bottom throughout is mud.

Yedo Bay.—Cape Sagami, in lat. $35^{\circ} 6\frac{1}{2}'$ N., long. $139^{\circ} 42\frac{1}{2}'$ E., bears N.E. $\frac{1}{2}$ E. 44 miles from Cape Diamond, and forms the south-west extreme of the Uraga channel, leading into the bay of Yedo, which is 12 miles wide, 30 miles deep, with excellent holding-ground, and capable of sheltering the fleets of the world. The survey of this bay by the U.S. Naval Expedition, embracing the western shore only, from Cape Kamisaki to Beacon point, there being no opportunity of examining the eastern side. The soundings from Treaty point, across in an E.S.E. direction, are regular, and 3 fathoms were found about $1\frac{1}{2}$ mile from the opposite shore.

Directions.—When bound to Yedo bay from the southward, pass westward of the chain of islands lying off the Gulf of Yedo, but beware not to mistake the deep bay of Wodawara or Kawatsu for the entrance of the Uraga channel, for on the north-east side of this bay there is a ledge of rocks extending several miles from the shore, and bearing about N.W. by W., distant 5 miles from Sakura point, and upon which one of the American squadron grounded. A stranger without a correct chart is liable to make this mistake, as the opening of the channel is not seen at a distance from this quarter, the shore appearing as an unbroken line.

The entrance of the Uraga channel bears N.E. $\frac{1}{2}$ N. distant about 25 miles from Oho sima. Steer in upon this line, and the saddle hill to the northward of Cape Sagami will be readily recognized, as well as the round black knob on the eastern side of the channel. When nearing the channel, the Plymouth rocks will be plainly seen on its western side; pass half a mile to the eastward of these, to clear the Ingersoll patch, a sunken rock with but 6 feet water on it, and the only known danger in the channel. Between these rocks and Cape Kamisaki the ground is clear and the anchorage good, if care be taken to get pretty well in, so as to avoid the strong tides which sweep around the latter with great rapidity. A spit extends a short distance to the southward from this cape, but to the northward of the cape the shore is bold and the water deep.

After rounding Cape Kamisaki, if bound to the city of Yedo, steer N.W. $\frac{1}{2}$ N.

until Perry island bears South, when Webster island will bear West; this will clear the Saratoga spit, which extends well out from the eastern shore. Then haul up N. by E., and run on this course until Treaty point bears S.W. by W., which keep on this bearing by steering N.E. by E. until the beacon on Beacon point bears N.W., when good anchorage will be found in 15 fathoms water.

The Saratoga spit, is dangerous, and caution is necessary in passing it. By rounding Cape Kamisaki at not more than a mile distant, and hauling up N.W. when abreast it, or even more westerly, keeping Perry island half a point on the port bow, a vessel will ensure clearing the spit.

From abreast Treaty point, and 2 miles from it, a N.E. course is recommended, instead of a more easterly one, on account of the eastern point of Yedo harbour, which bears N.E. $\frac{1}{4}$ E. 9 miles from Beacon house, having also a projecting and very steep spit off it. Beacon point is well marked by this house, which is very distinct; the opposite point has nothing to distinguish it. A bank extends a good 2 miles from the house when it bears North. In approaching the point, therefore, from the southward, do not come within $2\frac{1}{2}$ miles of it, nor stand into less than 10 fathoms, while the beacon on the point is between the bearings of N. by E. and W. by S.

Having passed Beacon house at not within $2\frac{1}{2}$ miles, continue steering N.E. until the house bears W. $\frac{1}{2}$ N., when if that distance off the point the soundings will be 12 fathoms, and no vessel should come within that depth. A N.N.E. course may then be steered, taking care not to shoal the water under 10 fathoms until the house bears S.W., when the Japanese ships and forts will be seen bearing about N.W. The course will then be N.W. and N.N.W. to the anchorage, the water shoaling so regular and gradual that a berth may be taken in any convenient depth. The *Furious* anchored in 15 feet, at low water, over a bottom of soft mud, good holding-ground, with five well-constructed and armed forts immediately in front of the western part of the city bearing from N. $\frac{1}{4}$ W. to N.W., Beacon house S. $\frac{1}{4}$ W., and the peak of Fuzi-zama W. $\frac{1}{4}$ N. (N. $87^{\circ} 42'$ W. true), distant about 50 miles.

American Anchorage.—If bound to American anchorage, from Cape Kamisaki, steer N.W., and anchor in 8 or 10 fathoms water, with Perry island bearing S.S.E., and Webster island S.W. by S.

Powhatan Bay.—There is good anchorage in this bay in 6 or 7 fathoms water. Near the anchorage there are two snug coves, in which vessels may conveniently repair and refit.

Susquehanna Bay, at 3 miles W.N.W. from Cape Kamisaki, is well sheltered, but it contains a number of reefs and rocks, and is, therefore, not recommended as an anchorage.

Mississippi Bay, at 4 miles to the northward of American anchorage, is well sheltered from the prevailing winds. Upon anchoring, it is necessary to give the shore a good berth, to avoid a shoal which extends out from half to three-quarters of a mile. The conspicuous headland or yellow bluff on the north side of this bay is called Treaty point; a shoal surrounds the point from two-thirds of a mile to a mile distant.

Between the American anchorage and Treaty point the soundings are irregular, shoaling suddenly from 12 to 5 fathoms on banks of hard sand.

Yoko-hama Bay is immediately to the northward of Treaty point, and N.N.W. 14 miles from Cape Kamisaki. To reach this anchorage steer for the wooded bluff, which terminates the high land on the north side of the bay, on a N. by W. $\frac{1}{2}$ W. bearing, until Treaty point bears S.W. by S.; this clears the spit off the point; then haul up about N.W. by N. for the bluff over the town of Kanagawa, and anchor in $5\frac{1}{2}$ or 6 fathoms, with the Haycock just open eastward of Mandarin bluff, which is the steep bluff a mile northward of Treaty point.

A flat extends one to two miles from the northern shore of this bay, between Kanagawa and Beacon point. There is also a shoal projecting a mile northward from Mandarin bluff.

Tides.—It is high water, full and change, in Yoko-hama bay, in the bay of Yedo, at 6h. 0m., and the greatest rise is 6 feet.

The tidal streams run strong in the middle of Yedo bay, and off the tail of the Saratago spit, Perry island, and Cape Kamisaki, their velocity is much increased; but in Yokohama bay they are scarcely felt.

Directions from Yedo to Strait of Tsugar.—Vessels bound along the eastern coast of Nipon, from the bay of Yedo to the eastern entrance of the strait of Tsugar, may pass within a few miles of Capes Susaki* and Sirofama, after which they will experience the full force of the current setting them to the E.N.E.

Caution is requisite in doubling Cape Blanco, a bold chalky bluff, as the American squadron passed over the edge of a reef in 22 fathoms water S.S.E. from this cape, distant about 5 miles; and from the heavy overfalls, in which fishing-boats were anchored, there must be much less water upon its shoalest part. As it was near nightfall, it was impossible to examine this reef, but its position is about lat. $35^{\circ} 8' N.$, long. $140^{\circ} 34' E.$, and Cape Blanco in lat. $35^{\circ} 13' N.$, long. $140^{\circ} 32\frac{1}{2}' E.$ †

From this cape to Tsugar strait no dangers were seen,‡ nor did the squadron approach the coast sufficiently near to test the accuracy of the charts, until arriving off Cape Nambu, the north-east point of Nipon. From the northward and eastward, at the distance of 6 or 8 miles, the outline of this point resembles the back of a sperm whale, with its head to the southward, the Dodo rocks, off the point, forming the flukes. On nearing the entrance of the strait, the water thermometer suddenly falls 15° or 20° , as the vessel runs from the north-easterly current into the cold current setting through the strait. From Cape Nambu a N.W. by W. course made good will lead to Hakodadi head.

Pirado or Hirado Island, lying off the west side of Kiusiu, was visited in 1859 by H.M.S. *Roebuck*, on her passage from Hongkong to Japan, and a spacious harbour found on its north-west side.

The harbour runs east and west, is $2\frac{1}{2}$ or 3 miles deep, and sheltered from

* On the north side of Cape Susaki there is an excellent harbour, named Susaki bay, which affords excellent shelter from north, round easterly, to W.N.W.—Mr McDonald, Commander of the ship *Medita*, 1860. See Plan of Susaki Bay on Chart of Nipon, No. 2,347.

† These positions are doubtful, as the unfavourable weather prevented observations near them. They are probably 6 or 8 miles too far eastward.

‡ The Russian frigate *Arkhold* reports the existence of a reef in lat. $36^{\circ} 15' N.$, long. $141^{\circ} 28' E.$; but this position must be considered as doubtful, as the vessel had no observations for two days previous to seeing the reef. The *Highflyer* passed within a mile of it on an unusually bright moonlight night, and saw nothing.—Edward H. Hills, Master H.M.S. *Highflyer*, 1860.

all winds. A good guide to recognize its position is a small island lying off the north point of entrance. There are three islets in the harbour, and good anchorage in 4 fathoms was found between the southern islet and the shore. There is a deep bay running in a southerly direction, inside the southern point of entrance, but there was no time for its examination.

Meac-sima Group.—The Meac-sima group are two small islands, extending nearly 4 miles in a N.E. and S.W. direction, but not more than a mile broad.

Taka sima, the north-east island, is nearly $1\frac{1}{4}$ mile long, and three-quarters of a mile wide. It is elevated 610 feet above the sea, and nearly level at the top, with cliffy precipitous sides, excepting to the southward, where there appeared to be some shelter for fishing-junks, as several were observed at anchor; in clear weather it may be seen upwards of 30 miles.

Kusa-saki, the south-west island, is less than half the size of the north-east island, but 100 feet higher and very craggy; its remarkable peak, which is in lat. $32^{\circ} 2' 47''$ N., long. $128^{\circ} 30' 42''$ E., probably suggested the name of the group to its first discoverers.

Me sima and Wo sima, the intermediate small islands and rocks, are high and cliffy, the latter partaking generally of the sugar-loaf form.

The only outlying rocks noticed extend South about a third of a mile from the south-west island, and may be almost considered part of the main group.

The approach* to these islands from the northward is quite clear. Between the Asas Ears and Pallas rocks the ground is pretty even, and the general depth is about 81 fathoms.

Pallas Rocks are three in number, two of which lie close together, and one N.E. $1\frac{1}{4}$ cable from the largest, which is the south-western of the group.

The largest rock does not exceed a third of a cable in diameter, and is about 60 feet high; the other two are about one half that elevation. They are steep-to, and soundings were obtained at the distance of a mile South from them, in 95 fathoms, sand and shells. The largest rock is in lat. $32^{\circ} 14' 17''$ N., long. $128^{\circ} 13' 30''$ E.

Udsi Sima, Parker, or Roche Poncié islands, are four in number, the largest of which is about 2 miles in circumference, 1,049 feet above the sea, and in lat. $31^{\circ} 12'$ N., long. $129^{\circ} 23'$ E. Two and a half and one mile respectively to the south-west of the larger island are two small islets; and to the eastward of the large island, about a mile, is the fourth islet.†

Retribution Rocks, three in number, were discovered by H.M.S. *Retribution*‡ 6th August 1858. They lie north and south of each other, about 2 cables apart, in lat. $31^{\circ} 23'$ N., long. $129^{\circ} 37\frac{1}{2}'$ E. The two southernmost rocks rise in a needle form about 60 feet above the sea; the northern rock is flat, and only 10 feet high. The vessel passed about a quarter of a mile to the

* The *Furious* passed about 3 miles from these islands; but until the ground in their vicinity has been more minutely examined they should be approached with caution, as the sea was seen breaking heavily nearly a mile from the shore.—*Stephen Court, Master, H.M.S. Furious, 1858.*

† The Udsi sima are high, and of considerable extent. The easternmost island appeared larger and its position to be farther north than marked in the chart; no foul ground was visible near them.—*Stephen Court, Master of H.M.S. Furious, 1858.*

‡ These rocks were subsequently seen by the United States steamer *Mississippi*, and named the Mississippi rocks.—*Captain G. S. Hand, H.M.S. Sampson, 1859.*

northward of this group, which appeared to be steep-to; no discoloured water was seen, nor bottom obtained with the hand-lead.

Kosiki Islands (Meac sima of the French chart), consisting of two large and several small islands, extend in a N.N.E. and S.S.W. direction from lat. $31^{\circ} 35'$ to $31^{\circ} 52'$ N., and from long. $129^{\circ} 36'$ to $129^{\circ} 51'$ E.; they are very little known, neither are the Nadiejda rocks, which are supposed to lie in lat. $31^{\circ} 48'$ N., long. $129^{\circ} 36'$ E.

Tsukurase Islands.—Off the south end of the Kosiki group, at the distance of 8 miles, are the Tsukurase or Sympl-gades islands, three in number, also very imperfectly known. H.M.S. *Highflyer* passed about 2 cables to the eastward of them in September 1859, and they are described as three islets forming a triangle, the sides of which are each not more than a cable in extent; a rock awash was observed lying a quarter of a mile to the southward of the group.

Nagasaki Harbour is formed at the head of a bay running in a north-east direction on a peninsula at the western extremity of Kiusiu island. Cape Nonno, the southern point of the bay, is the extreme of a promontory, which consists of a hill with a split or double summit, and at a distance has the appearance of an island; it may also be recognized by the islets in its vicinity, and in clear weather can scarcely be mistaken when within the distance of 6 or 7 miles.*

The harbour of Nagasaki may be divided into three parts, for it contains three distinct anchorages; but the outer ones cannot be recommended at all seasons, the water being too deep, and the swell too heavy to render them safe. The first or outer road is westward of Papenberg island; the second or middle is to the eastward; and the third is at the head of the harbour in front of the city.

The entrance to the outer road is between the north end of Iwo sima and Fukuda saki. The anchorage is in from 22 to 25 fathoms, over a bottom of thick green oaze, with fine sand, good holding-ground. A vessel will lie here sheltered except from the N.W.; but as the wind blows seldom from this direction during the North-east monsoon, and never very strong, it is quite safe at this season.

The only known danger in this road is the Barracouta rock, lying off the southern side of Kamino sima; but the ship *Templeman*, 23d July 1860, is reported to have struck on a rock, from which the bluff south end of Papenberg bore E. by S., and Tree rock N.E. The vessel was leaving the harbour, the wind was light, and she was passing a rock which was thought to be the Barracouta.

The anchorage in the middle road, eastward of Papenberg, is in about 17 fathoms, more towards Papenberg than the eastern shore. To the N.N.E. of Papenberg, and distant a third of a mile, is a small flat wooded island, named Nezumi; and about the same distance farther in the same direction is the small bay of Kibata, in which there are 6 to 10 fathoms water. This, in all the harbour of Nagasaki, is said to be the best place to refit a ship, for in the inner road the shore is everywhere so muddy that no ship can approach it.

* See Plan of Nagasaki Bay, No. 2,415; scale $m = 1$ inch.

From the middle to the inner road, abreast the city, the direction of the harbour is N.E. $\frac{1}{2}$ N., and the distance $2\frac{1}{2}$ miles, the depth decreasing gradually from 18 to 5 fathoms. The harbour is not more than half a mile wide, and in some places only 3 cables. The anchorage near the city, which stands on the eastern shore, is in about 6 fathoms, over a bottom of thin clay.

Tides.—The time of high water, full and change, in this harbour, is 6h. 28m., and the greatest rise $6\frac{1}{2}$ feet.

Directions.—When leaving the Yang-tse kiang for the Japan islands, if bound to Nagasaki, a direct course may at once be steered for Meac sima, or Asae Ears group, the highest island of which is visible in clear weather at about 37 miles. With Meac sima bearing South from 3 to 6 miles, a N.E. by E. course for 62 miles will place a vessel off the Mitsuse rocks, which lie 3 miles to the north-west of Cape Nomo. The Mitsuse are in line with this cape when bearing S.E. by S.; and two rocks lie off it, one S.E. by S. half a mile, and the other S.W. by W. not quite that distance; Kaba sima will also be seen just shutting in with the cape when bearing S.E. by E.

From the Mitsuse steer for the north-west extreme of Iwo sima, passing about half a mile to the north-west of two rocky patches, named Kutsnoze and Sotonohirase, which are always visible, being just awash at high water. After rounding Iwo at any convenient distance, as no apparent danger extends off it, steer about E. $\frac{3}{4}$ S. for the entrance of the channel leading to Nagasaki, midway between Papenberg island and the Hungry rock, passing northward of the Hirase rock, which, like the Hungry, just covers at high tide.

When the channel leading to the city comes fairly open, haul up to the north-east for it, keeping the western shore aboard while the Dutch consul's flag-staff bears between E.N.E. and E. by S., to avoid the Desima shoal, which extends about the third of the way over from the eastern shore, and narrows the channel considerably. Vessels can anchor in midchannel either above this shoal, with the flag-staff to the southward of E. $\frac{3}{4}$ S., or below it, with the flag-staff to the northward of E.N.E. The outer anchorages cannot be recommended, the water being too deep and the swell too heavy to render them safe. A rocky ledge, which uncovers at low water, extends about half a cable's length off the western shore, and is marked by a pole beacon, from which the above flag-staff bears about East.

TSUGAR STRAIT.

The Strait of Tsugar, separating Nipon from Yezo island, is about 40 miles in length in an E.N.E. and W.S.W. direction, and $9\frac{1}{2}$ miles wide at its narrowest part. The following description is by John Richards, Master Commanding H.M.S. *Saracen*, who surveyed the strait in 1855:†

Cape Gamaley.—In approaching the western entrance of Tsugar strait from the south-west, the Bittern rocks will be seen lying W. by S. about 16 miles from Cape Gamaley. The land about this cape is moderately elevated

* Stephen Court, Master of H.M.S. *Furious*, 1858.

† See Chart of Strait of Tsugar, No. 2,441; scale, $\frac{1}{4}$ = 0.3 of an inch.

and level. The coast between it and Oho saki, to the northward, is low and sandy. Sasagota bay (of Krusenstern's chart), at 6 miles to the southward of Oho saki, appears to be nothing more than a large shallow lagoon; its entrance is narrow and barred right across, with only sufficient depth to admit junks at high water. Between the bay and Oho saki the coast is safe of approach, having regular soundings, and fair anchorage in N.E. winds.

Oho Saki, or Cape Greig, is remarkable from its peculiar form, and being the commencement of high land extending to Tatsupi saki, which bears from it N.N.W. $\frac{1}{2}$ W., $8\frac{1}{2}$ miles. The bay between these points, although containing much foul ground, may be useful to a vessel not able to get through the strait during an easterly gale. The best anchorage is in 12 fathoms, and three-quarters of a mile off shore, at one-third the distance from Oho saki to Tatsupi saki. The bottom of the bay is very foul.

Tatsupi Saki, or Cape Tsugar, the south point of the eastern entrance to Tsugar strait, is a bluff, 262 feet high, from whence the land rises to the height of 2,200 feet, at the distance of 4 miles inland. A large rock, 300 feet high, lies 2 cables to the N.E. of the cape, and is connected to it by a low neck of sand and stones. On a N.W. and S.E. bearing, this rock makes like an island. The cape is steep-to, but the strong eddies near it make it prudent not to approach it nearer than a mile.

Gun cliff, at $9\frac{1}{2}$ miles E. by S. $\frac{1}{2}$ S. from Tatsupi saki, is steep-to, and has a battery of six guns on its apex, which is 200 feet high. There is a remarkable black rocky cliff three-quarters of a mile to the westward.

In the bay between these points, off the town of Memoyah, about half a mile from the shore in 8 fathoms, there is capital anchorage, indeed the best in the strait next to Hakodadi. A little to the southward of the town there is a fine stream of good water, which may easily be obtained. Wood is also abundant.

After passing Gun cliff the shore is less steep, and bottom will be found in 30 to 40 fathoms right across to the opposite coast of the peninsula of Nambu. From the south point of this coast a steep cliffy shore, with deep water close to, trends to the northward, nearly in a straight line to Toriwi saki. The cliffs are coloured with the most brilliant and varied tints, and, like the entire coasts of the strait, are of basaltic formation. Among the most remarkable are the Red cliffs, rising to the height of 1,600 feet, at 17 miles to the southward of Toriwi saki. At 9 miles farther to the northward are two remarkable pointed cliffs, named Double head. Nearly 2 miles to the S.W. of this head is a rock 42 feet high; and North about 3 cables from this is a rock awash at low water.

Toriwi Saki is a low tapering point, off which, at the distance of a cable, is Low islet or Omasaki sima, 40 feet high. The ground all around this cape and islet is very foul, except to the N.E., where a vessel may anchor to wait tide in 13 fathoms, with the centre of the islet bearing S.W. by S. distant about a mile. This is a useful anchorage for vessels approaching Hakodadi from the eastward, particularly during the light south-westerly winds common to the strait during the summer months. There is a tide race, near the full and change of the moon, 3 miles North of Low islet, and heavy overfalls with a north-east swell. On such occasions care must be taken to avoid this locality. There is a clear channel between the race and the islet.

Siriya Saki.—From Low islet the coast to the eastward is foul for about 3 miles, after which it may be approached without fear. At $10\frac{1}{2}$ miles from Low islet is a remarkable red cliff, which shows well to the westward; and at 2 miles to the westward of this cliff there is a high sharp bluff, and a high round bluff 2 miles to the eastward.

From the latter bluff the coast is low to within 4 miles of Siriya saki, or Cape Nambu, where it rises to 1,265 feet, and descends again towards the cape in a gentle slope, making at a distance like an island. There is good anchorage in the deep bay formed between this cape and the red cliff, but the best is on its western side, abreast the coast line where the high and low land meet, in 15 fathoms, with the above round bluff bearing W.N.W. 2 miles. Off the cape, at the distance of 3 cables, is a small white rock 70 feet high. There is also another rock, rather larger, lying a cable off shore, at 2 miles to the south-west of the cape. The coast within 4 miles of Cape Nambu is studded with rocks, and altogether foul.

Cape Yesan, or Esamu, the north point of the eastern entrance to Tsugar strait, is the east extreme of a bold promontory, with several remarkable dome-shaped mountains in the rear. The cape itself is a steep cliff about 600 feet high; the volcano immediately above it is 1,935 feet high, and frequently capped with a light cloud of steam, but not otherwise active. The west side of this mountain is covered with patches of sulphur, having the appearance of snow at a distance. There is anchorage in the bay about 2 miles westward of the cape; a kedge or stream anchor is recommended to be used, when unable to make way against the tide.

At $8\frac{1}{2}$ miles S.W. by W. of Cape Yesan is Conical islet, 200 feet high, lying close to the coast, which in its immediate neighbourhood is high and cliffy, and the approach steep and safe: there is, however, a dangerous low point one mile to the westward; and at $2\frac{1}{2}$ miles to the eastward is Foul point, which is low, and has a dangerous reef extending 2 cables from it.

Cape Siwokubi, or Cape Blunt, bears W. $\frac{1}{2}$ S. $2\frac{1}{2}$ miles from Conical islet, E. by S. 12 miles from Hakodadi head, and N. by E. $\frac{1}{2}$ E. $9\frac{1}{2}$ miles from Low islet, which is the narrowest part of the strait. This cape is steep-to, and the north-east current frequently runs with greater strength close to the rocks than out in the stream. The summit of the bluff immediately above the cape is 1,022 feet high; from thence the high land ranges in towards the Saddle mountain. The coast for about 7 miles to the westward is a level plain of an average elevation of 200 or 300 feet; beyond 7 miles, it descends to the low beach connecting the high land of Hakodadi head with the main.

Hakodadi Head is the south extreme of a bold-peaked promontory, 1,186 feet high, standing well out from the high land of the main, with which it is connected by a low sandy isthmus. The head is steep and precipitous, and safe of approach. At $4\frac{1}{2}$ miles west of the head is Mussell point, off which a reef extends 2 cables and is steep-to. The coast from thence to Cape Saraki, at $4\frac{1}{2}$ miles to the S.W., is level but fringed with rocks, and requires caution in approaching. To the westward of the cape the shore is low, with a sandy beach safe of approach, and clean ground for anchorage to within 3 miles of Cape Tsiuka.

Hakodadi Harbour.—Hakodadi bay, on the northern side of Tanager strait, is 4 miles wide and 5 miles deep, and for accessibility and safety is one of the finest in the world. Its entrance is between Hakodadi head and Mussell point, which bear East and West of each other, distant $4\frac{1}{2}$ miles. The harbour is in the south-eastern arm of the bay, and is completely sheltered, with regular soundings and excellent holding-ground.

Tides.—It is high water, full and change, in this harbour, at 5h. 0m., and the extreme rise and fall of tide is 3 feet.

Directions.—In entering Hakodadi harbour, after rounding Hakodadi head, and giving it a berth of a mile to avoid the calms under the high land, steer for the sharp peak of Komaga-daki, bearing about North, until the eastern peak of the Saddle mountain, bearing about N.E. by N., opens to the westward of the round knob on the side of the mountain, then haul up to the northward and eastward, keeping them well open until the centre of the sand-hills on the isthmus bears S.E. by E. $\frac{1}{2}$ E. (these may be recognized by the dark knolls upon them). This will clear a spit which runs in a N N.W. direction two-thirds of a mile from the north-western point of the town; * then bring the sand-hills a point on the port-bow, and stand in until the north-western point of the town bears S.W. $\frac{1}{2}$ W., when the vessel will be in the best berth, in $5\frac{1}{2}$ or 6 fathoms water.

If it is desirable to get nearer in, haul up a little eastward of South, for the low rocky peak which will be just visible over the sloping ridge to the southward and eastward of the town. A vessel of moderate draught may approach within a quarter of a mile of Tsuki point, where there is a building-yard for junks. This portion of the harbour, however, is generally crowded with vessels of this description; and unless the want of repairs or some other cause renders a close berth necessary, it is better to remain outside.

If the peak or Saddle is obscured by clouds or fog, after doubling the promontory, steer N.N.E., until the sand-hills are brought upon the bearing above given, when proceed as before directed.

A short distance from the tail of the spit is a detached sand-bank, with $3\frac{1}{2}$ fathoms on it. The outer edge of this is marked by a white spar-buoy. Between this and the spit there is a narrow channel with $4\frac{1}{2}$ fathoms water. Vessels of moderate draught may pass on either side of the buoy, but it will be prudent to go to the northward of it.

Should the wind fall before reaching the harbour, there is good anchorage in the bay, in 25 to 10 fathoms water.

Cape Tsuka, at 11 miles S.S.W. of Cape Saraki, is a high cliffy point, and may be further known by three rocks which extend a quarter of a mile from a point one mile eastward of it; the outer rock of the three is of a conical form and 70 feet high. The land to the westward for 4 miles is high and cliffy; about half way between the cape and the end of the cliffs there are two waterfalls.

* The north-east end of the fir-trees in line with the Jowhouse clears the eastern side in 5 fathoms water; and the foot of the hill in line with the middle of the sandy point leads along the northern side of the shoal—*Captain E. Stewart, H.M.S. Nankin. 835.*

If these leading marks should be in the clouds, as they generally are, keep the western extreme of the promontory of Hakodadi bearing South or S. $\frac{1}{2}$ W., which will clear the spit, and haul to the eastward when the centre of the sand-hills on the isthmus bears S.E. by E. $\frac{1}{2}$ E.—*Commodore the Hon. C. Elliot, H.M.S. Sybille, 1858.*

Vessels can anchor in the bight of the bay, between Capes Tsiuka and Sirakami; but as a southerly wind on the western tide sends in a cross swell, it would not be prudent to anchor far in. The best position is in 15 to 20 fathoms, with the southern white cliff bearing West about a mile.

Cape Sirakami, or Nadiejda, the north point of western entrance to Tsugar strait, is a high bluff similar to Cape Siwokubi, but not so safe of approach. The coast, for more than a mile on each side of the cape, is bordered with numerous rocks, generally above water, some of which run off nearly 2 cables. As it is not known whether the dangers extend under water beyond this distance, it will be prudent to give the cape a good berth in passing.

From Cape Sirakami the coast trends W. by N. $\frac{1}{4}$ N. 5 miles to Cape Matsumae, which is low, and off it is a conical islet with a small temple or building on it. The bay between is very rocky, excepting off the east end of the city of Matsumae, where there is good anchorage in 12 fathoms at half a mile off shore; but this anchorage would of course be unsafe in southerly winds. H.M.S. *Sybilie* in 1855 coasted along this bay at about 2 miles off shore, and had irregular soundings, 16 to 25 fathoms, shoaling suddenly when near the city from 13 to 5 and 7 fathoms.

Currents and Tides —During the survey of Tsugar strait by the *Saracen*, in June, July, and August 1855, a constant N.E. current set through the middle of the strait, the breadth of which varied considerably according to the state of the wind and weather. Before and during a N.E. wind its strength was much diminished; but with the wind from the opposite direction, it would expand and fill up two-thirds of the channel against the strength of the western tide.

The tide in the stream runs about 12 hours each way near the full and change of the moon, and there are only two regular tides by the shore in 24 hours. At full and change, the flood or eastern stream makes at Tatsupi saki at 6h. 30m. A.M., at 7h. 0m. at Cape Tsiuka, and at 7h. 30m. at Toriwi saki. The western stream begins about 12 hours later. The turn of the stream takes place $1\frac{1}{2}$ hour later every day.

Ko Sima, which lies W. $\frac{1}{4}$ S. $16\frac{1}{2}$ miles from Cape Sirakami, the north-west point of entrance to the strait of Tsugar, has a high round peak, 974 feet high, and there are two remarkable sugar-loaf islets or rocks lying close off its west end.*

U Sima, lying about 24 miles to the W.N.W. of Ko sima, is higher and longer.

Okosiri Island lies off the south-west coast of Yezo, about 30 miles N. by E. of U sima. On two occasions H.M.S. *Sybilie* passed through the channel between Okosiri and Yezo. The south extreme of Okosiri is low, and detached rocks lie about 2 miles south of it. Some of these rocks are 10 to 15 feet above water, and apparently a reef connects them with the island. There may be anchorage off the south point, but the eastern side of the island is steep-to, and no bottom could be obtained when sailing through the channel, which is about 10 miles wide at its northern entrance. The north-east point of the

* Captain K. Stewart, R.N., 1855.

island appeared from a distance to have a rocky ledge running out a short distance from it. On the Yezo side of the channel the land is high, and the coast apparently bold-to.

Directions.—Sailing vessels approaching Tsugar strait from the westward during foggy weather should guard against being carried by the current to the northward past the entrance. Should the weather be clear when nearing Cape Gamaley, it may be as well to sight it; but if doubtful, shape a course (allowing for the probable current) direct for Cape Greig. Should a fog come on suddenly when nearing this cape, recollect that the coast is clear and sandy, and the soundings are regular to the southward, but rocky with irregular soundings to the northward of it. The cape is steep-to, and, standing out prominently from the coast line, forms a good landmark.

No particular directions are required in passing through this strait to the eastward, as there are no hidden dangers, and the north-easterly current will always be found strongest in the middle of the stream. After passing Cape Tsugar, if the weather is thick, and the vessel bound to Hakodadi, endeavour to make Cape Tsiuka, and proceed from thence to Mussell point; or giving Cape Tsiuka a berth, feel the way up into the bay, between it and Cape Saraki, by the lead, and anchor till the weather clears.

Approaching the strait from the eastward, steer for Cape Nambu, and endeavour to make it on a N.W. bearing. Pass the cape at about a mile distant, then haul in to avoid the current and to anchor, should it fall calm. In this case, by keeping this shore close aboard, the vessel may probably be drifted up to Low islet, off Toriwi saki, by the western stream, when the north-east current is running like a mill stream in midchannel.

At the anchorage off Low islet, the vessel must wait a favourable opportunity for crossing the strait. During the summer months the winds are generally light from the south-west for a considerable period; the wind, however, generally freshens a little when the western stream makes, and this is the right time to weigh. Pass about half a mile from Low island, and in crossing the current take care not to be set to leeward of Hakodadi.

Proceeding from Hakodadi to the westward against S.W. winds, keep well inside Cape Tsiuka, and if unable to round it, anchor with the stream or kedg about 2 miles to the north-east, weighing again when the next western tide makes. Should the wind be very light, a vessel may not clear the strait in one tide; in this case it will be better to wait a tide to the eastward of Cape Sirakani, and take the whole of the following tide to clear the strait, than run any risk of being swept into the strait again by the current. Vessels passing through the strait, particularly to the westward, should have a good kedg and 150 fathoms of hawser ready for immediate use, and must keep the land close aboard.

Volcano Bay and Endermo Harbour.—The U.S.S. *Southampton* visited this bay and harbour in 1854, and verified the accuracy of Captain Broughton's survey made in September 1796. Cape Yetomo, at the entrance of the harbour, is in lat. $42^{\circ} 21' N.$, long. $140^{\circ} 56\frac{1}{2}' E.$

* See Plan of Endermo Harbour, No. 2,674; scale, $m = 5\frac{1}{2}$ inches.

VOLCANO BAY AND ENDERMO HARBOUR.

The following description is from Broughton's voyages: "I have seen few lands that bear a finer aspect than the northern side of Volcano bay. The entrance is formed by the land marking the harbour, which the natives call Endermo, and the south point, which they call Esarmi; they bear from each other N. by W. $\frac{1}{2}$ W., and S. by E. $\frac{1}{2}$ E., distant 33 miles. There are no less than three volcanoes in the bay, which induced me to call it by that name. The depth is 50 fathoms in the centre, and the soundings gradually decrease on the approach to either shore. During our stay at the period of the equinoxes we experienced generally very fine weather, with gentle land and sea winds from N.E. and S.E., and no swell to prevent a vessel riding in safety, even in the bay; and the harbour of Endermo is quite sheltered from all but bad weather, by bringing the bluff on the extreme part of the isthmus, which forms the starboard point in coming in, to bear N.W.; in this position, in 4 or 5 fathoms water, the port entry point on the north shore was in one with the bluff."

In running for the harbour, the island must be kept open with the starboard entry point till within half a mile of a small inlet (which is only so at half tide), and then steer in to the S.W., when the water will shoal, and any convenient berth taken. The soundings gradually decrease from 10 to 2 fathoms, soft bottom. High water, full and change, at 5h. 30m.; rise and fall 6 feet.

CHINESE WORDS OCCURRING IN CHARTS AND SAILING DIRECTIONS.
as they are pronounced in the Court Dialect.

<u>Chinese.</u>	<u>English.</u>	<u>Chinese.</u>	<u>English.</u>
Uhah	Barrier	Ma-tau	Jetty, port.
Chah-hwang-muh	Room	Miau	Temple.
Chau	District city, islet.	Mun or Moon	Channel, passage.
Chin	Town	Nan	South, southern.
Chuen	Channel.	Ni	Mud.
Chung-yuen	Mainland.	Nai	Inner.
Fau-fu	Buoy.	Pau-tai	Fort.
Fau-tau	Mart.	Peh	North.
Fu	Department city.	Peh or Pei	White.
Gau, (au of o)	Harbour.	Pwan-sheh	Rocka.
Hai	Sea.	Sha	Sands.
Hai-kau	Bight, creek.	Shan	Hill, mountain.
Hai-kioh	Cape.	Shan-hu	Coral.
Hai-mun	Estuary, strait.	Shan-ting	Mountain peak.
Hai-yau	Gulf.	Shan-tau	Bluff, cliff.
Haih-kau	Strait.	Sha-sien	Shoal.
Hiang-tsun	Village.	Sha-tan	Bar.
Hien, Chau	District city.	Sheh	Stone, rocks.
Heh	Black.	Sheh-tan	Reef.
Ho	River.	Shui	Water.
Ho-tun	Fire signal.	Si	West, western.
Hu	Lake.	Sian-ho	Rivulet.
Hung	Red.	So or Sho	Town, village.
Hwan or Wan	Bay.	Tao or Tau	Head.
Hwang	Yellow.	Tah	Pagoda.
Kau	Mouth.	Tau, Sew or Chau	Island.
Kiang	River.	Ting, Ti-tau	Promontory.
Kiau	Bridge.	To-muh	Wooded.
King	Metropolis.	Tsiau-pi	Cliff.
Koh	Rocky peak, headland.	Tani-sha	Gravel.
Kwang-lau	Lighthouse.	Tsiu-wei	Rocky, stony.
Kwan	Custom-house.	Tung	East, eastern.
Kuh	Valley.	Tu-tau	Ferry.
Lau	Tower.	Wan or Hwan	Bay.
Lin	Forest.	Wai	Outer.
Ling	Chain of hills.	Wei	Military post.
		Yen-tun	Fire beacon.

The vowels are to be sounded as in Spanish or Italian, or as in the following English words:—*u* and *i* as in ravine, *e* as in there, *o* as in long, *u* as in flute. The letter *h* following a vowel is intended to denote that it has rather a short sound, as *kuh* (valley) is sounded shorter than *fu* (a second-class city).

In Japanese, *saki* means cape; *sima*, island; *yama*, mountain; *daki* or *taki*, peak; *iro*, fire; *oko*, large.

TABLE OF POSITIONS*

ON THE

COASTS OF CHINA, KOREA, AND TARTARY, AND OFF-LYING ISLANDS; AND IN THE SEA OF JAPAN, GULF OF TARTARY, AND SEA OF OKHOTSK.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Authorities.
CHINA, EAST COAST.				
Hongkong . . .	Point Albert . . .	22 16 27	114 10 48	Belcher, 1841.
Raleigh rock . . .	“ . . .	22 2 0	113 47 0	Bate, 1857.
Ninepin rock . . .	“ . . .	22 15 45	114 22 7	Collinson, 1845.
Single island . . .	East summit . . .	22 24 6	114 39 12	“
Tuni-ang island . . .	Summit . . .	22 27 6	114 36 45	“
Mendoza island . . .	“ . . .	22 30 42	114 50 0	“
Pedro Blanco rock . . .	“ . . .	22 18 30	115 6 54	“
Pauk Piah rock . . .	“ . . .	22 32 54	115 1 0	“
Chino peak . . .	“ . . .	22 44 24	115 46 50	“
Cupchi point . . .	Hill on it . . .	22 48 7	116 4 26	“
Breaker point . . .	“ . . .	22 56 0	116 27 45	“
Cape of Good Hope . . .	“ . . .	23 14 0	116 47 0	“
Brothers islets . . .	South-east islet . . .	23 32 30	117 42 0	“
Tongsang harbour . . .	Fall peak . . .	23 47 15	117 36 48	“
Chapel island . . .	Summit . . .	24 10 18	118 13 30	“
Amoy island . . .	Citadel . . .	24 28 0	118 4 0	“
Dodd island . . .	Summit . . .	24 26 16	118 29 4	“
Chin-chu harbour . . .	Pisai island . . .	24 49 13	118 41 0	“
Pyramid point . . .	“ . . .	24 52 12	118 58 0	“
Sorrel rock . . .	“ . . .	25 2 18	119 10 36	“
Ocksen islands . . .	Western island . . .	24 59 0	119 27 30	“
Lam-yit island . . .	High Cone peak . . .	25 12 0	119 35 0	“
Hung-wha channel . . .	Sentry island . . .	25 16 30	119 45 0	“
Hai-san island . . .	Kiangshan peak . . .	25 36 18	119 50 42	“
Turnabout island . . .	Summit . . .	25 26 0	119 58 42	“
Pescadore islands, . . .	Observatory point, the . . .	23 32 54	119 30 12	“
Makung harbour . . .	second point on north side of harbour . . .			
River Min . . .	Temple point . . .	26 8 26	119 37 42	Richards, 1854.
Changchi island . . .	Highest peak . . .	26 14 0	120 1 42	Collinson, 1845.
Alligator island . . .	Summit . . .	26 9 0	120 26 0	“
Tung-ying island . . .	Peak . . .	26 23 12	120 31 0	“
Cony island . . .	Summit . . .	26 30 0	120 10 0	“
Double Peak island . . .	Highest peak . . .	26 36 6	120 11 12	“
Pih-seang islands . . .	Town island . . .	26 42 30	120 22 42	“
Dangerous rock . . .	Summit . . .	6 53 0	120 34 18	“
Tae island . . .	Easternmost . . .	26 59 12	120 43 48	“

* The positions by Belcher, Collinson, Bate, Gordon, Richards, and Ward, and by H.M. ships, depend upon Point Albert, on the north shore of Hongkong, being 114 deg. 10 min. 48 sec. East from Greenwich; those by Basil Hall depend upon the fort at the mouth of the Pei-ho being 117 deg. 49 min. East.

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Authorities
CHINA, EAST COAST— <i>contd.</i>				
Ping-fong island .	Summit . . .	27 9 42	120 32 42	Collinson, 1845.
Pih-quan peak .	" . . .	27 18 48	120 28 45	"
Nam-quan harbour .	Bate island . . .	27 9 20	120 25 50	"
Port Namki .	Eastern horn . . .	27 26 18	121 6 36	"
Pih-ki-shan island .	Summit . . .	27 37 18	121 12 18	"
Pong-whang group .	Coin island . . .	27 50 0	121 15 0	"
Pe-shan island .	Summit . . .	28 5 30	121 31 48	"
Soudan islet .	" . . .	28 15 54	121 44 36	"
Chikhok island .	" . . .	28 23 24	121 44 12	"
Tai-chan group .	Hea-chu islet . . .	28 23 18	121 55 12	"
Chih-seu island .	Summit . . .	28 40 30	121 47 24	"
Tungchuh island .	" . . .	28 42 12	121 55 6	"
Hieshan island .	Southernmost . . .	28 50 48	122 14 24	"
Montagu island .	North-east point . . .	29 10 30	122 5 0	"
Kweeshan island .	Patahecock . . .	29 21 54	122 13 42	"
Moose rock .	Summit . . .	29 32 42	122 13 36	"
Buffaloes Nose island .	High part . . .	29 36 12	122 1 24	"
Nimrod sound .	Middle island . . .	29 34 20	121 43 15	"
Chusan Archipelago :				
Tongting islet .	Summit . . .	29 51 42	122 35 48	"
Chuken island .	Peak . . .	29 54 0	122 25 18	"
Just-in-the-way islet .	Summit . . .	29 57 42	121 54 12	"
Chusan island .	Observation spot, Ting-hai harbour . . .	30 0 25	122 5 18	"
Video island .	Summit . . .	30 8 0	122 46 0	"
Barren isles .	Centre . . .	30 43 0	123 7 14	"
Saddle group .	North island . . .	30 50 0	122 41 0	"
Cairnmore-rock .	" . . .	30 42 10	122 34 40	Ward, 1858.
Chapu .	Battery . . .	30 56 0	121 3 0	Collinson, 1845.
Yung river .	Chin-hai citadel . . .	29 57 8	121 43 6	"
Yang-tse kiang .	Shaweishan islet . . .	31 25 12	122 14 0	"
" Wusung river .	Fort A at entrance . . .	31 23 30	121 30 11	Ward, 1858.
" Shanghai .	British Consul's flag-staff . . .	31 14 42	121 23 55	"
" .	Hankau city . . .	30 32 51	114 19 55	"
YELLOW SEA.				
Whang-ho or Yellow river	Entrance . . .	34 3 0	119 51 0	Hornburgh.
Staunton island .	Summit . . .	36 47 0	122 16 0	"
Shan Tung promontory	Extreme . . .	37 25 0	122 45 0	Ross.
Wei-hai-wei harbour	East end of Observatory islet . . .	37 30 19	122 7 0	Ward and Bullock, 1860.
Lung-mun harbour .	Ta-shan . . .	37 27 20	121 32 56	"
Chi-fau or Yen-tai harbour	Fort in Village bay . . .	37 35 56	121 22 33	"
Miau-tan group .	Peak of Northern island . . .	38 23 37	120 52 0	"
" .	South-west extreme of Miau-tan island . . .	37 56 0	120 37 12	"
Ta-lien hwan .	Observation spot on isthmus on south San-shan island . . .	38 52 38	121 49 30	"
Encounter rock .	" . . .	38 33 50	121 37 0	"
Blonde island .	" . . .	39 2 0	122 49 0	H.M.S. <i>Pygades</i> , 1840.
Dangerous shoal .	" . . .	38 56 0	124 37 0	"
GULF OF PE-CHILI.				
Pei-ho . . .	South Taku fort . . .	38 59 52	117 39 19	Ward and Bullock, 1860.

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Authorities.
ISLANDS NORTH OF LU-CHU— <i>contd.</i>				
Kikai sima . . .	Summit . . .	28 18 0	129 57 30	American Chart, 1854.
Yoko sima . . .	" . . .	28 49 0	128 59 0	French Chart, 1846.
Tokara sima . . .	" . . .	29 8 0	129 11 0	"
Sima-go islands . . .	Highest . . .	29 13 0	129 19 0	"
Akuisi sima . . .	" . . .	29 27 0	129 35 0	"
Suwa sima . . .	" . . .	29 38 0	129 42 0	"
Fira sima . . .	" . . .	29 41 0	129 31 0	"
Naka sima . . .	Peak . . .	29 53 0	129 50 0	"
Hebi sima . . .	" . . .	29 55 0	129 32 0	"
Kohebi sima . . .	" . . .	29 53 0	129 36 0	"
Kutsino sima . . .	Summit . . .	29 59 0	129 55 0	"
Blake reef . . .	Highest rock . . .	30 5 0	130 3 0	"
Yakuno sima . . .	Mount Motomi . . .	30 21 0	130 29 0	"
Seriphos rock . . .	" . . .	30 44 0	130 45 0	"
Yerabu sima . . .	Highest peak . . .	30 27 0	130 11 0	"
Take sima . . .	Centre . . .	30 48 0	130 24 0	"
Iwoga sima . . .	Highest peak . . .	30 42 0	130 17 0	"
Powhattan reef . . .	" . . .	30 41 0	130 19 0	U.S. frigate <i>Powhattan</i> , 1860.
Trio rocks . . .	Centre rock . . .	30 45 0	130 5 0	French Chart, 1846.
Buro sima . . .	Centre . . .	30 50 0	129 55 0	"
Ingersoll rocks . . .	Highest . . .	30 51 0	129 26 0	"
Udai sima . . .	Largest . . .	31 12 0	129 23 0	"
Retribution rocks . . .	" . . .	31 23 0	129 37 30	H.M.S. <i>Retribution</i> , 1858.
Nadieja rocks . . .	" . . .	31 48 0	129 36 0	French Chart, 1846.

ISLANDS OFF SOUTH-EAST COAST OF NIPON.

Lot's Wife rock . . .	" . . .	29 47 0	140 22 30	American Chart, 1854.
Ponafin island . . .	" . . .	30 33 0	140 15 0	"
Smith island . . .	" . . .	31 18 0	139 50 0	H.M.S. <i>Tribune</i> , 1859.
Bayonnaise island . . .	" . . .	32 0 40	140 0 0	American Chart, 1854.
Onanga sima . . .	" . . .	32 50 0	139 50 0	"
Fatsixiu island . . .	Centre . . .	33 6 0	139 43 0	"
Broughton rock . . .	" . . .	33 42 0	139 17 0	"
Mec sima . . .	" . . .	34 6 0	139 29 0	"
Mecoura island . . .	" . . .	35 54 0	139 35 0	"
Redfield rocks . . .	Centre . . .	35 56 50	138 49 0	"
Kozu sima . . .	" . . .	34 13 15	139 8 0	"
Oho sima . . .	South-east point . . .	34 39 30	139 28 0	"
" . . .	North point . . .	34 47 30	139 24 0	"

JAPAN ISLANDS.

Kinaiu island . . .	Nagasaki harbour, Ne- sumi sima	32 43 22	129 50 33	Richards, 1855.
Nipon island, south- east coast	Gulf of Tutomi, Enora bay	35 10 0	139 3 15	Russian frigate <i>Diana</i> , 1853-55.
" . . .	" Heda bay . . .	34 58 11	138 58 15	"
" . . .	" Arari bay . . .	34 50 0	138 56 25	"
" . . .	" Tago bay . . .	34 47 3	138 55 45	"

TABLE OF POSITIONS.

Place	Particular Spot.	Latitude, North.	Longitude, East.	Authorities.
JAPAN ISLANDS— <i>contd.</i>				
Nipon island, south-east coast	Cape Idsu . . .	34 36 0	138 50 35	American Chart, 1854.
" . . .	Rock island . . .	34 34 20	138 57 10	"
" . . .	Simoda harbour, Centre island . . .	34 39 49	138 57 30	"
" . . .	Yedo bay, Cape Sagami . . .	36 6 30	139 42 45	"
" . . .	" Webster island . . .	35 18 30	139 40 34	"
Strait of Tsugar	Islet off Cape Matsumae . . .	41 24 54	140 7 20	Richards, 1855.
" . . .	Hakodadi harbour, entrance to Kamida creek . . .	41 47 8	140 45 54	"
" . . .	Small islet on west side of Cape Nambu . . .	41 25 24	141 28 32	"
" . . .	Red Cliff point . . .	41 28 7	141 9 0	"
" . . .	Centre of Low island off Toriwi saki . . .	41 33 34	140 56 36	"
" . . .	North side of Tatsupimaki . . .	41 16 17	140 22 37	"
" . . .	Small rock off south side of Cape Greig . . .	41 5 39	140 20 19	"
Nipon island, west coast	South-west Bittern rock . . .	40 31 0	139 31 0	"
" . . .	Tabu sima . . .	39 31 0	138 23 0	"
" . . .	West point of Sado island . . .	38 1 0	138 17 0	"
" . . .	Yûtsai sima . . .	37 50 30	136 55 0	"
" . . .	Astrolabe rock . . .	37 35 0	136 54 0	"
" . . .	Cape Noto . . .	37 28 0	137 22 0	"
" . . .	North point of Oki islands . . .	36 30 0	133 23 0	"
" . . .	Centre of Miso sima . . .	34 48 0	131 9 0	"
" . . .	Cape Louisa . . .	34 40 0	131 36 0	"
" . . .	Richards island . . .	34 32 0	131 18 0	"
" . . .	Obrée island . . .	33 51 0	130 2 0	"
" . . .	Peak of Wilson island . . .	33 54 0	130 25 0	"
" . . .	Rock in centre of channel on north-west side of Firado island . . .	33 21 30	129 26 11	"
" . . .	South side of Yenoisima . . .	32 59 44	129 21 24	"
" . . .	North side of island within Hardy harbour . . .	32 49 0	128 56 33	"
" . . .	Peak of Kusa-saki island . . .	32 2 47	128 30 42	"
" . . .	Pallas rocks, largest . . .	32 14 17	128 13 30	"
Yezo island . . .	Volcano bay, Cape Yotomo . . .	42 21 0	140 56 30	American Chart, 1854.
KURIL ISLANDS.				
Kunashir . . .	St Anthony peak . . .	44 31 0	145 46 0	Golownin, 1811.
Chikotan . . .	Centre . . .	43 53 0	146 43 30	"
Iturup . . .	Cape Okebets . . .	45 38 30	149 14 0	"
" . . .	Cape Ricbord . . .	44 29 0	146 34 0	"
Urup . . .	Cape Kastrikum . . .	46 16 0	150 22 0	"
" . . .	Cape Vanderlind . . .	45 39 0	149 34 0	"
Brat Chirnoef . . .	" . . .	46 29 15	150 33 30	"
Rebuntsiriboi . . .	" . . .	46 32 45	150 37 10	"
Broughton . . .	" . . .	46 42 30	150 28 30	"
Simnair . . .	Prevost peak . . .	47 2 50	151 52 50	"
Ketoy . . .	South point . . .	47 17 30	152 24 0	"

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Auth orities.
WEST AND SOUTH COASTS OF KOREA.				
Chodo island . . .	South point . . .	38 27 0	124 34 40	French frigate <i>Virginie</i> , 1856.*
Deception bay . . .	Middle of entrance . . .	37 3 0	126 33 0	"
Caroline bay . . .	West point of entrance . . .	37 1 30	126 25 0	"
Joachim harbour . . .	" " " " . . .	36 53 30	126 17 50	"
Chassériau bank . . .	South extreme . . .	36 59 20	126 18 0	"
Daniel island . . .	West side . . .	38 17 0	124 56 0	Horsburgh.
Sir James Hall group . . .	North island . . .	37 56 0	124 44 30	Basil Hall, 1816.
Marjoribanks harbour . . .	" " " " . . .	36 25 0	126 25 0	Horsburgh.
Tas-de-Foin islet . . .	Mauzac islet . . .	36 26 45	126 28 0	<i>Virginie</i> , 1856.
Wai-ian-do island . . .	" " " " . . .	36 24 30	126 24 0	"
Basil bay . . .	" " " " . . .	36 15 45	126 9 50	"
Guérin island . . .	" " " " . . .	36 7 38	126 42 20	Basil Hall, 1816.
Alceste island . . .	Summit . . .	36 7 0	126 1 9	<i>Virginie</i> , 1856.
Quelpart island . . .	" " " " . . .	34 6 0	125 11 9	"
	Observation spot on middle of west side of Bullock island . . .	33 29 40	126 58 25	Belcher, 1845.
Port Hamilton group . . .	West point of Observatory island . . .	34 1 23	127 20 34	Richards, 1855.
ISLANDS OFF COAST OF CHINA.				
Pratas island . . .	North-east part . . .	20 42 3	116 43 22	Richards, 1858.
Balintang islands . . .	Centre of group . . .	19 58 0	122 14 0	Horsburgh.
Batan group . . .	Islet off south-west point of Y'Ami island . . .	21 4 56	121 58 24	Belcher, 1843.
Gadd rock . . .	" " " " . . .	21 43 0	121 41 0	Ross, 1817.
Vela Rete rocks . . .	" " " " . . .	21 42 0	120 52 0	"
Botel-Tobago sima . . .	South extreme . . .	22 1 40	121 39 45	Beechey, 1826.
Little Tobago sima . . .	" " " " . . .	21 57 30	121 40 30	"
Formosa island . . .	Ape hill . . .	22 38 3	120 16 30	Richards, 1855.
" . . .	Saracen head . . .	22 36 14	120 16 33	"
" . . .	Port Kok-si-kon, Observatory point . . .	23 6 0	120 5 0	"
" . . .	Tam-sui harbour, Sand point . . .	25 10 6	121 26 6	Gordon, 1847.
" . . .	Ke-lung harbour, Ruin rock . . .	25 9 0	121 47 0	"
" . . .	Foki point . . .	25 19 0	121 37 0	Collinson, 1845.
" . . .	Petou point . . .	25 8 0	121 57 0	"
" . . .	Sau-o bay, south point . . .	24 36 0	121 53 0	H.M.S. <i>Inflexible</i> , 1858.
Samasana island . . .	" " " " . . .	22 41 0	121 28 0	Collinson, 1845.
Hoa-pin-su island . . .	North face . . .	25 47 7	123 30 31	Belcher, 1845.
Meiacio sima group . . .	Kumi island, north beach . . .	24 26 0	122 56 0	"
" . . .	Broughton bay, landing place . . .	24 21 30	124 17 40	"
" . . .	Port Haddington, Hamilton point . . .	24 25 0	124 6 40	"
" . . .	Tai-pin-san, south-west bay . . .	24 43 35	125 17 49	"
Lu-chu group . . .	Napha-kiang road . . .	26 12 25	127 42 20	Beechey, 1827.
" . . .	Deep bay, observatory spot at the head . . .	26 55 35	127 59 42	American Chart, 1854.
" . . .	Port Melville, Onting village . . .	26 40 42	128 0 0	Basil Hall, 1816.

* The *Virginie's* positions depend upon Quelpart island (observation spot on middle of west side of Bullock island) being 136 deg. 58 min. 25 sec. East from Greenwich. The position of Chodo is doubtful.

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Authorities
ISLANDS SOUTH-EAST AND EAST OF LU-CHU.				
Borodino islands .	Centre of south island .	25 52 45	131 12 17	American Chart, 1854.
Bishop rocks . . .	Centre	25 20 0	131 15 0	Bishop, 1796.
Rasa or Kendrick island . . . . .	. . . . .	24 27 0	130 40 0	<i>La Cannelière</i> , 1807.
Parce Vela or Douglas reef . . . . .	. . . . .	20 31 0	136 6 0	Sprengle, 1848.
Lindsay island . . .	. . . . .	19 20 0	141 15 30	Lindsay, 1848.
Santa Rosa shoal . .	West extreme . . .	12 30 0	144 15 0	Raper.
Green island	Fort San Luis . . .	13 26 0	144 45 0	French corvette <i>Uranie</i> , 1819.
Rota or Serpan island	North-east point . .	14 12 0	145 23 0	"
Aguijan island . . .	Centre	14 54 0	145 38 0	"
Tinian or Buena Vista island	Sunharom village . .	14 59 0	145 43 0	"
Seypan island	Peak	15 13 0	145 49 0	"
"	Magicienne bay . . .	15 8 30	145 44 0	H.M.S. <i>Magicienne</i> , 1858.
Farallon de Medinilla, or Bird island . . .	South point	16 0 0	146 7 0	French corvette <i>Uranie</i> , 1819.
Anatagan island . . .	East point	16 20 0	145 47 0	"
Sariguan island . . .	Centre	16 40 0	145 52 0	"
Zealandia breakers . .	. . . . .	16 50 0	145 54 0	Foster, 1858.
Farallon de Torres . .	Centre	17 18 0	145 57 0	French corvette <i>Uranie</i> , 1819.
Guguan island	East point	17 36 0	145 57 0	"
Amalaguan island . .	North-east point . .	18 6 0	145 58 0	"
Pagan island	North point	18 17 0	145 52 0	"
Grigan island	"	18 51 0	145 43 0	"
Asuncion island . . .	Peak	19 41 0	145 27 0	Beechey, 1827.
Uracas or Manga islands	Centre	19 57 0	145 20 0	Lapérouse, 1786.
Guy rock	"	20 30 0	145 32 0	Douglas, 1789.
Marshall or Los Jar- dines islands . . .	"	21 40 0	151 35 0	Marshall, 1788.
Sebastian Lobos or Grampus islands . .	South-west island . .	25 10 0	146 40 0	Raper.
Forfana island	Centre	25 65 0	143 0 0	"
San Augustino island	Peak	24 14 0	141 20 0	King, 1805.
Sulphur island	"	24 48 0	141 13 0	"
San Alessandro island	"	25 14 0	141 11 0	" 1799.
Mal abrigos or Mar- garet islands . . .	Centre	27 20 0	145 45 0	Magee, 1773.
Bonin islands	Port Iloyd in Peel island	27 3 35	142 11 30	Beechey, 1827.
"	Newport in Hillsborough island	26 36 0	142 9 0	American Chart, 1854.
Rosario or Disappoint- ment island . . . .	. . . . .	27 16 0	140 51 0	Raper.
ISLANDS NORTH OF LUCHU.				
Yori sima	Centre	27 2 0	128 25 24	French Chart, 1846.
Yeiabu sima	South peak	27 21 0	128 31 34	"
"	"	27 14 0	128 33 0	Collinson, 1845.
Tok sima	Highest peak	27 44 0	128 59 0	French Chart, 1846
Iwo sima	"	27 51 0	128 19 0	Collinson, 1845.
Oho sima	North extreme . . .	28 31 40	129 40 12	American Chart, 1854.

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Authorities.
KURIL ISLANDS.—cont.				
Matua . . .	Peak	48 6 0	153 12 30	Krugenshtam, 1805
Raikoke . . .	"	48 16 20	153 15 0	"
Musir	"	48 35 0	153 44 0	"
Shiaah-kotan .	Centre	48 52 0	154 8 0	"
Kharim-kotan .	Peak	49 8 0	154 39 0	"
One-kotan . . .	South-west point .	49 19 0	154 44 0	"
Makanrushi . .	Centre	49 51 0	154 32 0	"
Shumahu . . .	"	50 46 0	156 26 0	"
Alaid	"	50 54 0	155 32 0	"

KAMSHATKA, SOUTH-EAST COAST.

Mount Villeuchinski .	Peak	52 42 0	158 20 0	Beechey, 1827
Petropaulski . . .	Church	53 0 53	158 43 30	"

SEA OF JAPAN AND GULF OF TARTARY.

Sentinel island		34 34 0	128 53 0	French corvette <i>Capricieuse</i> 1852
Tsus sima	Observatory rock, Tsus- sima sound	34 18 55	129 12 0	Ward, 1859.
Matu sima	Peak	37 22 0	130 56 0	Russian frigate <i>Pallas</i> , 1854.
Liancourt rocks		37 14 0	131 55 0	H.M.S. <i>Hornet</i> , 1855.
Chosan harbour . . .	Observation spot . .	35 6 6	129 1 49	Ward, 1859.
Cape Clonard		36 5 45	129 33 30	Russian frigate, <i>Pallas</i> , 1854.
Port Losaref	Observation point, South 1½ mile from south end of Butenef island	39 19 12	127 32 48	"
Napoléon Road . . .	Musoir rock, west point of entrance	42 37 22	130 44 10	H.M.S. <i>Winchester</i> , 1855.
Guérin gulf	Sandy point	43 9 0	131 50 0	"
Hornet bay	Fox island	42 41 0	132 56 0	H.M.S. <i>Hornet</i> , 1856.
Islet point		42 49 0	133 51 0	"
Port Michael Seymour	Observation spot at head of port	43 46 0	135 19 0	"
St Vladimir bay . . .	Low point	43 53 40	135 27 21	Ward, 1859.
Shelter bay		44 28 0	136 2 0	H.M.S. <i>Barracouta</i> , 1856.
Sybille bay		44 43 45	136 23 30	"
Pique bay		44 46 15	136 27 15	"
Bullock bay		45 2 0	136 44 0	"
Luké point		45 19 30	137 10 15	"
Cape Disappointment .		45 40 30	137 38 15	"
Cape Suffren		47 20 0	138 58 0	"
Fish river		47 55 0	139 31 0	"
Low cape		48 28 0	140 10 0	"
Beachy head		48 56 0	140 21 0	"
Barracouta harbour .	Tullo island	49 1 50	140 19 0	"
Castries bay	Quoin point	51 28 0	140 49 30	H.M.S. <i>Hornet</i> , 1855.
Jonquière bay		50 54 0	142 7 0	"

TABLE OF POSITIONS.

Place.	Particular Spot.	Latitude, North.	Longitude, East.	Authorities.
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LAPÉROUSE STRAIT.

Risiri . . .	Pic de Langie . . .	° ' " 45 11 0	° ' " 141 13 15	Krusenstern, 1805.
Refunari . . .	Cape Hieber . . .	45 27 45	141 4 0	"
Cape Notoro . . .	. . . . .	45 54 15	141 57 56	"
Cape Noasyab . . .	. . . . .	45 25 50	141 34 20	"
Dangerous rock . . .	. . . . .	45 47 15	142 8 45	Lapérouse.
Cape Sirostoko . . .	. . . . .	46 2 20	143 30 20	Krusenstern, 1805.

EAST AND NORTH COASTS OF SAGHALIN.

Cape Löwenörn		46 28 10	143 40 0	Krusenstern, 1805.
Cape Touin		46 50 0	143 33 0	"
Cape Seniavin		47 16 30	142 59 30	"
Bernizet peak		47 33 0	142 20 0	"
Cape Mouloukol		47 57 45	142 44 0	"
Cape Dalrymple		48 21 0	142 50 0	"
Cape Solomonof		48 52 30	143 1 30	"
Cape Patience		48 52 0	144 46 15	"
Robben island	Centre	48 32 15	144 23 0	"
"	N.E. edge of reef	48 36 0	144 33 0	"
"	S.W. edge of reef	48 28 0	144 10 0	"
Cape Bellinghansen		49 35 0	144 25 45	"
Cape Rimnik		50 12 30	144 5 0	"
Mount Tiara		50 3 0	143 37 0	"
Cape Ratmanof		50 48 0	143 53 15	"
Cape Delisle de la Croyere		51 0 30	143 43 0	"
Downs point		51 53 0	143 13 30	"
Cape Otmeloi		52 32 30	143 14 30	"
Cape Virst		52 57 30	143 17 30	"
Cape Klokatcheff		53 46 0	143 7 0	"
Cape Löwenstern		54 3 15	143 12 30	"
Cape Elizabeth		54 24 30	142 46 30	"
Cape Maria		54 17 30	142 17 45	"

SEA OF OKHOTSK.

Great Shantar island	North point	55 11 0	137 40 0	Krusenstern, 1805.
St Iona island . . . . .	. . . . .	56 25 30	143 15 45	"
Port Ayan	Cape Vnesnyi	56 25 28	138 25 50	Russian chart, 1851.

SAILING DIRECTIONS FOR THE GULF OF SIAM.

VARIATION from 2° East in 1858.

CHAPTER XI.

VESSELS bound from Singapore to the Gulf of Siam* in the northeast monsoon generally pass to the eastward of the Natunas; smart sailing vessels proceed between the Anambas and the Natunas, and endeavour to make Pulo Obi; they then steer for Pulo Damar, if bound to Kamput, or outside Pulo Panjang and Pulo Way, direct for Cape Liant, if bound to Bangkok. In February and March, it frequently happens that vessels fall in with an easterly wind off Pulo Aor, that takes them right up to Pulo Obi.

From Singapore, in the south-west monsoon, they should make the Redang islands, and keep the western coast of the gulf aboard, passing inside of Pulo Losin and Koh Krah.

Early in the north-east monsoon, vessels bound to the Gulf of Siam from Hongkong will not profit anything by leaving China earlier than the middle of October.

WEST COAST.

Pulo Kapas, the south-west point of which is in lat. 5° 13' N. and long. 103° 14' 47" E., is 1½ mile long in a north and south direction, three quarters of a mile wide, and elevated 478 feet. A large rock lies at the distance of a cable's length to the north-west of it. The island is fertile, and inhabited by fishermen, who cultivate a few vegetables for their own consumption.

Water.—A small quantity of good water may be procured from wells dug by the natives near the middle of Pulo Kapas.

Anchorage.—The channel inside Pulo Kapas, between the island and the main, is 2½ miles broad, and quite safe, having sandy bottom and regular soundings. Good anchorage will be found in it, within half or three-quarters of a mile of the island.

Tringano Head bears W.N.W. distant about 5 miles from the north point of Pulo Kapas, and S.S.E. ½ E. 6 miles from the entrance of Tringano river; it is remarkable as the only rocky point in the neighbourhood.

* See Admiralty Charts, China Sea, General, No. 1,370; scale, degree=0.9 inch; Gulf of Siam, with corrections to 1858, No. 2,414; scale, degree=2.4 inches.

Rock awash.—A rock, awash at high water, lies at a quarter of a mile from the beach, and $1\frac{1}{2}$ mile to the southward of Tringano entrance.

Tringano River.—The entrance to Tringano river may be easily known by the large gap or opening in the coast line, as well as by a remarkable cone, situated one mile to the southward of the town. There is also in the town a small steep hill, 100 feet high, with a fort, on which the Rajah's flag is displayed when a vessel passes within signal distance of the place.

The river has a bar with 7 feet over it at low water. Within the bar, and immediately off the town, there is good anchorage in 5 fathoms, but the river itself above the town is very shallow. The Rajah is hospitable to strangers, and the natives of the coast are friendly. Wood, water, and fresh stock can be procured at reasonable rates.

Tides.—It is high water, full and change, at the entrance of Tringano river, at 8 a.m.; rise 7 feet.

Eulo Rocks.—From Tringano to the north-westward, the coast is low and slightly convex to Eulo village, where the high land approaches close to the beach. The Eulo rocks, a small group of 6 feet elevation, lie immediately off the village, an eighth of a mile from the beach, N.N.W. $\frac{1}{2}$ W. 9 miles from Tringano river, and S.E. $\frac{1}{2}$ E. 8 miles from Seal bluff, which is inside the Seal rocks.

The Seal Rocks consist of three distinct groups, the extremes of which lie north and south, nearly a mile from each other. The South Seal is elevated 9 feet, the other two groups only 3 feet; there are deep channels between them.

The South Seal lies nearly $2\frac{1}{4}$ miles from Seal bluff, and there is a good channel between them, with regular soundings. In standing, however, towards Seal bluff, care should be taken to avoid a rock, awash at low water, lying North a quarter of a mile from the bluff. To avoid the foul ground off the bluff, as well as off the South Seal rock, do not approach either of them nearer than half a mile.

Bukit Trokit, a rock elevated 140 feet above the sea, lies 4 miles to the northward of the Seal rocks; there is a rock, only 5 feet high, nearly a mile to the westward of it.

House Rock, lying N.W. $\frac{1}{2}$ N. $10\frac{1}{2}$ miles from Seal bluff, is so named from its appearance.

Redang Island.—The Great Redang, the peak of which is in lat. $5^{\circ} 48' 16''$ N., long. $102^{\circ} 59' 30''$ E., is safe to approach on all sides. It is surrounded by small islets and rocks, but they are all bold-to, and have generally good water inside of them. There is a fine bay on the north side, and a small harbour on the south side of the island, the heads of which are connected by low land, giving to the Great Redang the appearance of two islands at a distance. The harbour is protected to the southward by Pulo Pinang, and although small, might be useful to a ship in distress or in want of repairs. The passage to the northward of Pulo Pinang has 5 fathoms in it, but it is

only a cable broad, and dangerous when the tide runs strong. There is plenty of wood and fine fresh water, and turtle may be caught in abundance on a beach at the north part of the island.

There is a village on Pulo Pinang, and a few huts scattered in different parts of the Great Redang island. The chief man holds his office from the Rajah of Tringano. The natives are civil, but they have nothing to sell beyond a few cocoa-nuts. A ship putting in here for wood and water in the south-west monsoon will find it more convenient to anchor inside Bukit Mara, a small islet off the south part of the island, in 10 fathoms, with Bukit Mara bearing South half a mile.

The conical peak of the Little Redang is 985 feet high. All these islands are quite safe to approach.

Printian Islands.—The Printian group, about 15 miles to the north-east of Great Redang, is also safe to approach. The channel between the two large islands, although narrow, is quite safe for vessels with a leading wind. Good anchorage will be found on either side of this channel, but the most secure is to the southward.

The islands are inhabited, but fresh water is scarce. The channel between the large islands and the rocky group to the north-west is quite safe.

Turtle-Back Island, so named from its peculiar shape, is elevated 346 feet, and bears N.W. distant 26 miles from Seal bluff. The intermediate coast is low, with a sandy beach until within 2 miles of the islands, where there are two bluffs; after which it is again low and sandy to the entrance of the Kalantan river. Between Tringano and Turtleback island, at the distance of several miles inland, there are two ranges of high mountains; the northern one and nearest the coast is elevated 3,388 feet. The only convenient watering place along this line of coast is at the Great Redang island.

The channel between Turtle-back and the Printian islands, as well as the passage between it and the main, is safe.

From Turtle-back island the coast trends N.W. $\frac{1}{2}$ N. 30 miles to the east point of Kalantan river. There are no dangers on any part of it that are not apparent, and attention to the lead will always indicate the distance from the land.

Pulo Loxin, in lat. $7^{\circ} 21' N.$, and long. $102^{\circ} 0' 30'' E.$, is 7 feet in height above high water, steep to all round, and in size and appearance resembles a vessel of a hundred tons bottom up. Soundings of 20 fathoms were obtained at the distance of $1\frac{1}{2}$ cable's length to the S.S.E. of it.

Singora.—The position of Singora, in lat. $7^{\circ} 13' 54'' N.$, long. $100^{\circ} 34' 54.6'' E.$, may be known by two small islands off the port, as well as from a remarkable piece of table land at the entrance of the river opposite the town, which stands just within the east point of the river, and contains about 2,500 inhabitants. The land to the northward of the table land is low; to the southward the coast is hilly.

Anchorage.—The anchorage for small vessels is in 17 feet water, close inside the inner island, called Pulo Ticos by the Malays. The river has a bad

bar at its entrance; the deepest water will be found close to the beach, about half a mile to the northward.

Koh Krah, in lat. $8^{\circ} 24' 47''$ N., long. $100^{\circ} 44' 09.6''$ E., is half a mile long, a third of a mile broad, and 530 feet high. Two high rocks, and a rock awash, lie to the southward. A small quantity of stagnant fresh water may be obtained on this island, and turtle are so plentiful that 150 have come up in a single night.

Lem Chong P'ra, or Cape Chong P'ra is a remarkable craggy headland of 1,060 feet elevation, in about lat. $10^{\circ} 54'$ N., long. $99^{\circ} 29'$ E. A narrow island, called Koh Buot, lies 2 miles to the southward of the cape, and within it is a snug bay named Chong P'ra. There are four small islands or rocks to the south-east of Koh Buot; the two outer rocks are 100 feet high, and lie N.N.E. and S.S.W., $1\frac{1}{4}$ mile from each other; the northern rock of the two is S. by E. 6 miles from Lem Chong P'ra.

Lem Tong Lan.—From Lem Chong P'ra, Lem Tong Lan bears N. by E. distant 18 miles. About midway within the bay formed by these points, is a level cliffy island, called Koh Tlu, nearly $1\frac{1}{4}$ mile long; and within this island to the south-west are two rocky islets, named Chang and Sing. There is no safe passage for vessels between Sing and Koh Tlu. Excepting the foul ground about Koh Tlu, the bay is quite safe.

Lem Tong Lan is 814 feet high, and the coast being very low within it, at a distance it makes like an island. At 11 miles north of Lem Tong Lan, there is a remarkable clump of conical hills, and a low dangerous island lies immediately off them, at the distance of a quarter of a mile from the shore.

From Lem Tong Lan, Koh Chan bears N.N.E., and the distance is 26 miles, and to Koh Luem it is 36 miles.

Koh Luem, in lat. $11^{\circ} 45'$ N., long. $99^{\circ} 48\frac{1}{2}'$ E., is the outermost of several islands which lie off the bays called Ao-ti-bon-lai (?), and Ao-ti-now (?). The middle and southern peninsulas forming these bays have each a remarkable rocky horn that may be seen 30 miles off.

Ao-ti-bon-lai affords the best anchorage for ships. W.S.W., 14 miles, within the south horn of Ao-ti-now, is the mountain named Kow Luang, elevated 4,326 feet, which is by far the most conspicuous landmark on the whole coast.

Koh Ta-kut bears N.N.E. $\frac{1}{4}$ E. 28 miles from Koh Luem. Between these points the coast is clear and the soundings regular.

Sam-roi-yot.—The land around Sam-roi-yot, or Three Hundred peaks, 25 miles to the northward of Koh Luem, may be easily recognized by its numerous ragged and sharp peaks, from which it takes its name.

Water.—The only fresh water to be obtained along this line of coast is from wells.

EAST COAST.

Pulo Obi.—The main island of the Obi group is nearly $2\frac{1}{2}$ miles long, north-east and south-west, and rather narrow near the middle, having the largest part to the south-west, which is also the highest part of the island (elevated 1,046 feet). Its south-west end is in lat. $8^{\circ} 25' 37''$ N., long. $104^{\circ} 47' 30''$ E. From this spot Cambodia point bears nearly N.W. by N., 11 miles; a small rocky island close to the north point of Obi, N.E. $2\frac{1}{2}$ miles; and Hull rock S.E. by E. 4 miles. There are also two small islands within a mile of the south-east point of Obi, which contracts the channel inside the Hull rock to little more than 2 miles. The approaches to, and passages between all these islands, are quite safe at a reasonable distance from the shore. H.M.S. *Saracen* ran between Obi and the Hull rock, and anchored under the lee of the island in 5 fathoms at about half a mile from the shore.

The channel between Pulo Obi, and the depth of 3 fathoms on the bank extending from the coast of Camboja, is a little less than 2 miles wide, and is quite safe, with 15 fathoms in it. Within this line, to the northward, there is a dangerous group of rocks awash at low water. There are two small pebbly bays in Pulo Obi; they lie on opposite sides of the island, one to the north-west, the other to the south-east; the best anchorage is directly off these bays, on either side of the island, according to the monsoon, at about half a mile from the shore. Fresh water is plentiful in each of these bays, but the shores are not very convenient for embarking it. All the islands are densely wooded, the ground near to the western bay appears to have been under cultivation, and the cassava root was seen growing; no signs of inhabitants were seen.

Pulo Panjang.—The main island of the Pulo Panjang group lies in lat. $9^{\circ} 18' 14''$ N., long. $103^{\circ} 26' 56''$ E. It is 3 miles long, east and west, and 2 miles wide, and is of a nearly uniform height of 550 feet, making like table land from the sea in every direction. There are two small islands at about a mile from the east end of Pulo Panjang, having deep channels between them; and one off the south point, which is connected to the main island by a ridge of rocks, with only 6 feet water on it. Besides these, there is a large white rock, 75 feet high, S. by W. $1\frac{1}{2}$ mile from its south point; and two large rocks elevated 110 and 40 feet respectively, bearing from the outer north-east part of Panjang N.E. by E. $8\frac{1}{2}$ miles.

Anchorage.—During the north-east monsoon the bay on the south-west side of Pulo Panjang affords capital shelter and good anchorage. There is a small rock elevated only 4 feet above high water, bearing S.W. nearly three quarters of a mile from the western point of the bay; this is the only danger near, as the shores of the bay are safe to approach to a reasonable distance. The anchorage on the south-east side of the island is very indifferent.

Supplies.—Fresh water and wood can be obtained in abundance in the bay on the south-west side of Pulo Panjang, and fish may be caught in any quantity with a seine.

Islands West of Koh Tron, and Depond Reef.—Pulo Way, Veer islet, Koh Prins, and the Tanqualah group, including Depond reef, were regularly surveyed, and the soundings taken in the neighbourhood seem to denote that the passages between them are safe; but as time would not permit these approaches to be sounded from the northward and westward, caution must be observed when steering for them from those quarters.

Pulo Way, or Koh Kwang Noi, about 50 miles north-west of Pulo Panjang, consists of two islands about the same size, and nearly the same height (250 feet); they are each about a mile long and a quarter of a mile wide. They lie about E.S.E. and W.N.W., and bear east and west distant nearly a mile from each other; the channel between them is quite safe. A rock, elevated only 3 feet above high water, lies E. by S. three-quarters of a mile from the east point of the eastern island; and there is a dangerous patch, which the *Saracen* struck on, with only 4 feet on it, lying N. by W. $\frac{1}{2}$ W. three-quarters of a mile from its north-west end.

Anchorage.—There is good anchorage off the north side of the eastern island, but the best anchorage is off a sandy bay on the north-east side of the western island. The *Saracen* anchored off this latter bay in 8 fathoms at a quarter of a mile from the shore.

Supplies.—The natives obtain their fresh water from a well about the middle of the eastern island; and from appearance, good water might be obtained on any part of either island at a moderate distance from the shore. The islands are covered with wood; the beaches afford turtle; and a single cast of the seine will generally procure a boat-load of fish.

Koh Tang or Tanqualah island, N.N.E. $\frac{1}{2}$ E., 15 miles from Pulo Way, is $3\frac{1}{2}$ miles long, very narrow, and has a peak rising 440 feet near its north end. There is a fine clean sandy bay on its eastern side, which will afford good anchorage in the south-west monsoon; and a small islet lies in the middle of this bay, which would afford some shelter to a vessel wishing to anchor here in the north-east monsoon. Within this islet will be found 7 fathoms water.

The Depond Reef, in lat. $9^{\circ} 58'$ N. long. $103^{\circ} 7'$ E., is about half a cable in diameter, and just awash at low water; it is steep to on all sides, and in fine weather might not be noticed until close upon it. From it the peak of Tanqualah is faintly seen bearing N. $\frac{1}{2}$ W. 19 miles; and the peak at the south end of the western Pulo Way is visible over the middle of the eastern Pulo Way, W. by S. $\frac{1}{2}$ S. $11\frac{1}{2}$ miles. The islands forming Pulo Way are well in sight from an elevation of 15 feet.

The channel between these islands and Koh Tron is believed to be quite clear and safe.

Pulo Damar, in lat. $9^{\circ} 1' 54''$, long. $104^{\circ} 20' 11''$ E., is $3\frac{1}{2}$ miles long, in a north and south direction, and one mile wide, and has a sharp peak near its centre, elevated 1,077 feet. Three small islands lie off its north point, at the distance of 2 miles, and there are also a number off its southeast end; no dangers were found to the westward of the island farther than half a mile. No fresh water was found. There are no inhabitants.

CHANNELS NEAR KAMPUT.

The Brothers are two small islands nearly 500 feet high, lying off the south point of Koh Tron. They bear E.N.E. and W.S.W. from each other, distant 3 miles apart. There are three rocks to the south-west of the West Brother; the outermost, which is the largest and named Table rock, forms a rocky table about 20 feet high, and lies S.W. $1\frac{1}{2}$ mile from the West Brother.

Directions for South Channel to Kamput.—The Brothers, with Pulo Damar, are the chief guides when bound to Kamput from the southward. Vessels intending to take the South channel to Kamput may, if necessary, pass to the northward of the Brothers, but they should not approach Round Hill point (the south point of Koh Tron) nearer than 3 miles, as a rocky ridge with $2\frac{1}{2}$ fathoms on it extends E.S.E. $2\frac{1}{2}$ miles from the point.

The eastern shore of Koh Tron, particularly from abreast of Pulo Cici round to its north point, is very dangerous. Between these points the island is bordered with a rocky irregular one-fathom bank, extending occasionally 3 miles from the island; along its steep edge the water is deep, and attention to this fact is the best way of avoiding the danger.

In standing towards the Koh Tron shore, always tack when the soundings deepen suddenly. Pulo Cici, or the Twins, are two small islets, connected together by a reef of rocks, and are covered with trees; the northern islet is 213 feet high. A vessel may pass within a mile on either side of them.

The water is rather shoal between Pulo Cici and South Pirate island, but the soundings are regular and the bottom sandy.

Caution.—Between Koh Tron and Pulo Cici there is a rock a cable in diameter, with only 2 feet water on it, on which the English schooner *Rosita* lately struck. From the rock the high Twin bears S.E. $\frac{1}{2}$ E. $4\frac{1}{2}$ miles; South Pirate island E. $\frac{1}{2}$ S.; Gunung Susu or Paps, 300 feet high (about a mile north of Bumbi bluff), N. $\frac{1}{2}$ W.; and Byoot peak, 1,608 feet high (near the north-east point of Koh Tron), N.W. by W. $\frac{3}{4}$ W. It is a coral rock, steep-to on all sides, but may be seen at a short distance from aloft by the discoloured water. A buoy has lately been placed on it, but it is doubtful if the natives will allow it to remain.

In passing between Pulo Cici and the 2-feet rock there is no particular guide available. Between the rock and Koh Tron, the soundings given in the chart will be the best guide. A good mark to lead down towards the west side of the rock from the anchorage at Kamput, is Bumbi cone in line with Bumbi bluff; but both the cone and the bluff will be lost sight of before arriving abreast of the rock; this latter mark leads into the anchorage of Kamput.

North Channel to Kamput.—For all large vessels the northern channel is recommended, as the water is deep in it and the soundings regular. Caution should be used in standing towards the edge of the north bank, near the western entrance of the Kamput river, as it is steep-to and rocky.

The ground is foul at the north point of Koh Tron. A number of large rocks, 20 feet high, extend about 2 cables' lengths from the point, having others near them under water.

The western entrance of the North channel between Water island and Koh Tron, is $2\frac{1}{2}$ miles wide, but there is a large flat rock just within it, and lying

SAILING DIRECTIONS FOR THE GULF OF SIAM.

North half a mile from the north-west point of Koh Tron; and a rocky island covered with trees lies W. by S. $1\frac{1}{2}$ mile from the same point. There are also two other small rocky islands to the southward of the entrance.

In passing through this channel, vessels should not if possible pass inside Flat rock, or any of the above small islands, as the ground is foul between them and Koh Tron, and the set of the tides irregular.

Water.—On the north-west side of Water island will be found good anchorage in 4 fathoms water, at the distance of a quarter of a mile from the shore; and all vessels intending to remain any length of time at Kamput would do well to anchor here and complete their water. The watering-place is in a sandy bay on the north-west side of the island; there is a fine running stream, and as the beach is very steep, the water is easily embarked. This bay is also a good place to haul the seine.

At Kamput the water is muddy and bad, and is procured from wells near the town at great expense.

Tides.—It is high water, full and change, at Rocky island (which lies about 5 miles to the S.S.E. of the entrance of Kamput river, and $1\frac{1}{2}$ mile to the westward of Temple island) at 4h. 0m., and the rise is about 4 feet. The highest tide took place on the day of the new moon. The streams here, as in most other parts of the Gulf, run for twelve hours near the full and change, subject to great and unaccountable irregularities.

Kusrovie Rock, in lat. $11^{\circ} 7' 13''$ N., and long. $102^{\circ} 44' 52''$ E., is about three-quarters of a cable in diameter and 35 feet high, without a particle of vegetation on it. Its shore is shelving, and isolated rocks extend to the distance of half a cable from it. The bottom can be plainly seen near it in 6 fathoms.

Koh Kut is a high level island 12 miles long, in a north and south direction between the parallels of about $11^{\circ} 33'$ and $11^{\circ} 45'$, with steep cliffy sides. There are two small conical peaks near its south end, the highest of which (the northern) is elevated 1,171 feet.

Water.—Good anchorage will be found in a bay near the north-west end of Koh Kut, with a fine stream of fresh water running into it. Fresh water may also be obtained on the eastern side of the island, about a mile from its north point. This island has no permanent inhabitants.

Koh Mak, lying 3 miles to the north-west of Koh Kut, and S.S.E. 7 miles from Koh Chang, is 3 miles in diameter, and very low excepting at its west end, which presents a rocky head to seaward, elevated 300 feet. It is inhabited by fishermen engaged in collecting biche-de-mer. There is a broad and safe channel between the archipelago of islands south of Koh Chang and Koh Mak; there is also a good channel between Koh Mak and Koh Kut.

Koh Chang is 16 miles long, in a N.N.W. and S.S.E. direction, and 6 miles wide, and consists of a mass of peaked hills intersected by rocky and precipitous ravines. The highest part of the island (a table near its centre) is elevated 2,446 feet. Notwithstanding the numerous islands and rocks that

fringe Koh Chang, no dangers were discovered near its shores but what were apparent. There is a native government station at a low jutting point on its eastern side, with about twenty persons, who are the only inhabitants. Tigers are said to be numerous on the island.

Water.—Fresh water may be obtained on the western side of Koh Chang, about 3 miles from the north point.

Lem Nam, forming the southern boundary of the channel between Koh Chang and the main, makes like a low woody island from the southward. A bank, named the Tung Yai, spits off for a short distance to the southward, but to the westward it extends in the direction of the middle of Koh Chang, more than half way across. The middle of this bank, to the westward, may be known by a small clump of black rocks just awash.

Tung Yai, the bay to the eastward of Lem Nam, affords good anchorage, but its eastern shore must be approached with caution, as several rocks lie off it at the distance of nearly a mile from the shore.

Tung Yai river, at the head of the bay, is a small stream, navigable only by boats. There is a scattered village and much cultivated ground about 7 miles from its entrance, but the natives state that the town of Tung Yai is situated a short distance inland from the left bank of the river. On the western shore of the bay there are some small scattered villages, and much cultivated ground. The natives were shy and suspicious at first, but afterwards civil and obliging.

From Tung Yai to the Kong river, the general direction of the coast is S.S.E., and is quite safe to approach, with regular soundings. With the exception of two rocky bluffs, the land near the sea is low and fringed by a straight sandy beach pierced by numerous small streams; but parallel to the coast, at the distance of 2 or 3 miles, a table land rises with great regularity to the height of more than 2,000 feet. This mountain mass rises at the distance of a few miles to the north-east of Tung Yai river, and falls again at the Kong river; one of its highest points was found to be elevated 4,000 feet. The channel between the main land and Koh Kut is quite clear, with regular soundings.

Lem Ling.—From Lem Ling or Junk point, the northern boundary of the channel inside Koh Chang, the coast trends N.W. $\frac{1}{2}$ N. 21 miles to Lem Sing. The coast between is low mangrove; but a short distance from it, and 5 miles from Lem Sing, are three small high islands. There is also a large river at the distance of 6 miles North of Lem Ling, the entrance to which is easily known by two small high islands lying immediately off it.

A small mangrove islet lies close to Lem Ling, and the ground is foul for some distance off it, and also for more than a mile along the shore to the northward; but Lem Ling is quite clear to the south-west. The channel between it and Koh Chang is 3 miles wide, and quite safe; but there is a rock, elevated 4 feet above the sea, lying S.S.E. 2 miles from Lem Ling; and dangers have been reported on the Tung Yai shore, well out in the channel, farther to the eastward.

The deep water in the channel lies on the Koh Chang shore, and as the edge of the Tung Yai bank is very rocky, it must be approached with caution.

Lem Sing, which forms the western side of the entrance to Chentabun river, at a distance appears like an island; it may be farther known by a conical islet, named Cone island, 405 feet high, lying a mile to the westward of it, as well as the remarkable white cliff on its eastern face.

Chentabun River.—The position of this river may be recognized at a distance by the mountain called Kow Sábáp, which rises to an elevation of 2,090 feet N.E. by E. 9 miles from its entrance. It may also be known by a white cliff on the point, named Lem Sing, which forms the western side of the river entrance. The eastern side of the entrance begins at Koh Chula or Bar island. The channel into the river between Koh Chula and Lem Sing has 13 feet in it at low water; but as it is only a quarter of a mile wide, it would be necessary to warp a large vessel in with a head wind. Vessels can ascend the river as far as the fork, which is within 5 miles of the town. Above the fork, the river is so shallow as to render it difficult to navigate by the small junks of the country.

There are two forts (in ruins), one on each side the river entrance, and a small village, called Paknam, just within the fort on the left bank.

Anchorage.—A convenient anchorage without the bar is, with Koh Chula N.E. by E. distant about half a mile.

Water.—Fresh stock is scarce, but an abundance of good water may be procured in a small bay to the westward of Lem Sing.

Tides.—It is high water, full and change, at the entrance of Chentabun river at 10h. 0m.; the rise is $5\frac{1}{2}$ feet. The highest tide took place on the day after the change. Here, as in the Bangkok river, the streams run for twelve hours at the full and change, and are subject to great irregularity.

Koh Samit (377 feet high), N.W. by W. $\frac{1}{2}$ W. $85\frac{1}{2}$ miles from Lem Sing, lies off Lem Ya, forming a channel between them, called Chong Samit, which is $1\frac{1}{2}$ mile wide, and has a depth of 3 fathoms in it.

Close to the southward of Koh Samit there is a small rocky island, named Tree island, and two large rocks; the outer, or Brown rock, lies S. by E. $4\frac{1}{2}$ miles from Lem Ya, and is in lat. $12^{\circ} 30' 32''$ N., and long. $101^{\circ} 25' 20''$ E.

Lem Ya may be known by a clump of conical hills extending from the coast 15 miles inland; the highest is elevated 2,165 feet. On each side of this headland the coast is low. The bay to the westward is slightly concave, and fringed with a sandy beach to Lem Sâ-hem-san, or Cape Liant. The bay to the eastward has several small islands in it.

Cape Liant or Lem Sâ-hem-san.—On approaching this cape from the southward, the outer islands of Chuen and Me-san (being the highest land in the neighbourhood) will be first seen.

Chalan island, in lat. $12^{\circ} 27' 46''$ N., and long. $100^{\circ} 57' 11''$ E., will not be observed until within 5 miles of it. It is a white rock 40 feet high, a cable's length in diameter, very steep-to, and quite safe to approach.

ISLANDS NEAR CAPE LIANT.

The channel between Chalan island and Koh Chuen is $2\frac{1}{2}$ miles wide, and quite clear. The channel between Koh Chuen and Koh Me-san is a mile wide, and there is also a channel between Cape Liant and Koh Riat, but it is only a quarter of a mile wide, and although much used by small vessels, it is dangerous during spring tides, and certainly should never be attempted in a sailing vessel, without a fair and commanding breeze. All these channels seem to be remarkably clear of danger.

Sheltered Bay.—Three miles to the westward of Cape Liant is a spacious bay, about 4 miles wide and 2 miles deep, with good anchorage all over it, and well sheltered by several small islands across its entrance; the eastern horn of this bay may be known by a remarkable cone, 454 feet in height. A vessel might be beached or hove down with safety inside Koh Pra. There are a few inhabited huts on the northern shore of the bay, but neither stock nor fresh water can be procured. Koh Yoh, the outer island fronting this bay, is remarkable from its resemblance to an erect triangle.

Ki-tea Bay.—Lem Putau, the north-west point of Sheltered bay, is a bold bluff headland of 600 feet elevation, and close round this head, to the northward, is a bay called Tung Ki-tea; fresh water can be obtained in its south-east corner, but in other respects it is an undesirable anchorage.

Tung Piong.—This bay lies one mile to the northward of Tung Ki-tea, and being sheltered by Koh Kram and Koh Irá, offers secure anchorage to vessels detained in the channel.

Koh Irá is nearly a mile from the southern horn of this bay; its side is fringed with reefs; and there is a dangerous reef of rocks lying 2 cables' lengths to the north-east of it. On this account it is recommended to keep the eastern shore of the channel aboard, as it is very steep and safe.

Koh Kram, which lies 9 miles to the north-westward of Cape Liant, is 3 miles long, north and south, and 2 miles wide, has a remarkable sharp peak of 704 feet elevation on its south-east side, and a bay to the northwest; its western shores are quite safe to approach, but reefs extend to the distance of three-quarters of a mile to the eastward, and for half a mile to the southward.

Sombrero Rock.—A remarkable rock, called Sombrero, lies three quarters of a mile from the south-east side of Koh Kram, and the channel between it and Koh Irá is about a mile wide. The Sombrero rock should not be approached closely to the northward, as there is much foul ground for a considerable distance in that direction.

Pilot Island or Koh Luem.—The south-west point of Koh Kram bears N.W. distance $16\frac{1}{2}$ miles from Chalan island, and from this spot Pilot island or Koh Luem is N.N.W. $\frac{1}{4}$ W. 18 miles; along this line runs a chain of small islands, called Rin, Kring-badung, Mena-mechy, and the comparatively large island of Pai, which is 2 miles long and one mile wide. The channels between all these islands are free from danger.

Koh Luem is three-quarters of a mile long in a north and south direction, and half a mile wide; it is as steep as a wall to the southward and westward, and rises from the sea bold and clifty all around, its peak, of a dome-like appear-

SAILING DIRECTIONS FOR THE GULF OF SIAM.

ance, being in lat. $12^{\circ} 57' 30''$ N., and long. $100^{\circ} 37' 41''$ E., and has an altitude of 445 feet. This island, from its conspicuous and peculiar position, has long been considered the principal landmark at the head of the Gulf; all vessels bound to the river Menam make it, and taking their departure from it, run boldly for the anchorage off the Bar by day or night.

Koh Lam, lying E. by S. 8 miles from Koh Luem, is $2\frac{1}{2}$ miles long and a mile wide, and has a remarkable sharp peak, elevated 685 feet. There is a small island, named North Lán, half a mile to the northward, and another, East Lán, a mile to the eastward. On the eastern side of Koh Lán is a village containing about 200 inhabitants, whose chief employment seems to consist in cultivating large fields of plantains, which appear to be the principal produce of the island.

Aspect of Coast.—From Lem Putau, the north-west point of Sheltered bay, Koh Klet-kéo bears North $6\frac{1}{2}$ miles, and from Tung Plong to the latter island the coast is high, presenting rocky bluffs to seaward, with sandy bays between. Three miles N.W. of Klet-kéo there is a remarkable cliffy rock, 40 feet high, with a few trees on its summit.

Lem Patáya is N. $\frac{1}{2}$ E. 9 miles from Klet-kéo, and E. by S. $2\frac{1}{2}$ miles from East Lán, the small island off the east side of Koh Lán. This cape presents a number of low rocky bluffs to seaward, whence the land rises with a gentle swell in-shore to the eastward, to the height of 370 feet, descending in the same manner to the low land in the neighbourhood; between Klet-kéo and Lem Patáya, there is a deep bay with low land. One mile E. by S. of East Lán there is a rocky bank with 3 feet on it, about a cable in length, which narrows the channel between it and Lem Patáya to $1\frac{1}{2}$ mile.

From Lem Patáya, Lem Kwan bears N.E. $\frac{1}{2}$ E. distant $3\frac{1}{2}$ miles, and Lem Kra-bang N. $\frac{1}{2}$ E. 9 miles. One mile north of Lem Patáya is a low rocky islet, a cable's length in diameter. Between Lem Patáya and Lem Kra-bang the land is low, and forms a bay about 2 miles deep. At Lem Kra-bang, the north point of this bay, commences a range of hills which borders the coast for 8 miles, and then runs inland and joins the Bangpla-soi mountains.

From Lem Kra-bang to Si-maha-racha and Bang Pra, the hills approaching the shore form a number of small rocky points, with sandy bays between.

Koh Si-chang.—W.N.W. 4 miles from Lem Kra-bang, commences the Koh Si-chang group, having a clear channel between the islands and the coast. Koh Si-chang is 4 miles long in a north and south direction, and 1 mile broad; and its peak, which rises to an elevation of 697 feet, bears N.E. by N. $1\frac{1}{2}$ miles from Pilot island or Koh Luem. There is an island with a sharp peak, 325 feet high, lying one-third of a mile to the southward of Si-chang, and a rock, 10 feet high, like the hull of a ship, about the same distance to the northward; an island also, called Koh Kam, and three islets, lie to the eastward; the western side is quite clear. A rock with 4 feet water on it lies E. by N. half a mile from the rock off the north point of Si-chang, and another with 3 feet N.N.W., one-third of a mile from the north point of Koh Kam.

Anchorage.—The anchorage is in a bay on the north-east side of Koh Si-chang, partly sheltered by Koh Kam and the islets to the eastward.

The best berth is between the inner or sandy point of Koh Kam and the village on Si-chang, or rather nearer Koh Kam. When all the streams are full, much time will be saved by watering here, but the anchorage possesses no other advantages that are not exceeded at Si-maha-racha.

Supplies.—The village is on the south shore of the above bay, and probably contains about 200 inhabitants, who appear less shy of foreigners than the natives of the coast to the southward. There are two streams of fresh water here, one empties itself into the sea just to the southward of the village, the other at the north point of the bay: but as they both depend on the rain for their supplies, they are frequently empty in the dry season. On these occasions, the inhabitants resort to their store of water jars, which are always kept full for emergencies of this nature. A few fowls and vegetables may be purchased.

Koh Si-maha-racha is a little rocky island about 90 feet high, lying about a third of a mile from the coast, N.N.E. $\frac{1}{2}$ E., $6\frac{1}{2}$ miles from Lem Krabang, and East $6\frac{1}{2}$ miles from the north point of Koh Si-chang.

Anchorage.—The best anchorage is in $3\frac{1}{2}$ fathoms at low water, with Si-maha-racha bearing E. by N. half a mile, or for a large vessel a quarter of a mile farther out on the same line of bearing, in 4 fathoms. This is apparently the best anchorage at the head of the Gulf, for communicating with the shore for it is better sheltered than any other part.

Supplies.—Fresh water is abundant on shore when the springs elsewhere are dry, and the towns of Si-maha-racha and Bang Pra could furnish large quantities of fresh stock. Si-maha-racha stands about S.E., half a mile from the island, and contains 500 inhabitants; and Bang Pra is about 3 miles to the northward, and has about 1,000 inhabitants. The latter town cannot be approached nearer than 2 miles by a vessel of large draught.

At the distances of half and three-quarters of a mile to the southward of Bang Pra are two fine streams of water that run into the sea through the beach, and the natives say that they never dry up in the hottest seasons. A boat might fill from these streams at high water, but at low tide the sands dry out so far that they could not be approached within half a mile.

The *Saracen* watered from a fine spring about half a mile inland from Si-maha-racha. The water was brought down from the beach in buffalo carts, which appear to be numerous, and contain three jars of 24 gallons each. There was no difficulty in procuring six tons in a day, at the rate of 90 cents per ton, or two shillings per cart.

The country in the neighbourhood could supply everything a vessel would require in the shape of refreshments, and game of every description abounds. The soil is good, and the vicinity of the Bang-pla-soi hills, rising to an altitude of 2,400 feet, would afford a retreat from the summer heats, and render this spot an admirable position for a European settlement.

Between Cape Liant and this watering-place the coast is very thinly inhabited. There are no streams of fresh water near the sea; the natives appear to depend chiefly on rain water, which is collected by bamboo spouts, fixed to the roofs of the houses, and stored in large earthen jars, of which a large number are to be found in every village.

Bang-pla-soi.—Double Head, N. by W. $\frac{1}{2}$ W. 8 miles from Koh Si-ma-ha-racha, is a prominent bluff, rising from the low land to the height of 270 feet, and appearing at a distance like an island. At 2 miles to the north-east of Double Head is the village of Anhin (a royal watering-place), and 4 miles E.N.E. of Anhin, in the depths of a shoal muddy bight, is the large town of Bang-pla-soi, a place of considerable importance. It is governed by a high noble, and has a good market; but unfortunately it is only accessible from the sea at high water, in consequence of an extensive mud flat, which in front of the town dries out nearly a mile at low water. Immediately at the back of the town there is a small range of hills of about 400 feet elevation, which is the last of the high land on this side of the gulf.

The **Bang-pa-kong River** empties itself into the gulf 3 miles to the northward of Bang-pla-soi, and appears to be a fine navigable stream, but time did not permit for its examination; from this to the Menam entrance, the coast is all low mangrove.

Menam Chau-phyu or Bangkok River.—On the western point of the entrance of the Bangkok river there is a small mound elevated about 30 feet above the surrounding mangrove, in lat. $13^{\circ} 32' N.$, long. $100^{\circ} 23' 55'' E.$, and this is the first land seen on approaching from the southward. From this mound Pilot island or Koh Luem bears S. $\frac{1}{2}$ E. $34\frac{1}{2}$ miles; Double Head S.E. by E. 22 miles; and Koh Si-chang peak S.E. by S. 25 miles.*

The Bangkok river is deep and free from shoals for a distance of 60 miles. At about 3 miles within the entrance, on the eastern bank, is Paknam, where vessels must anchor to discharge guns and ammunition, and take on board a custom-house officer. Here is a fair market, from which vessels remaining at the bar-anchorage can obtain their daily supplies of fresh food, but it is considered better to send to Bangkok for stock for a voyage.

Paklat Lang, on the western bank of the river, 5 miles above Paknam, is the entrance to a canal which saves a circuit of nearly 10 miles to boats proceeding to or from Bangkok: ships must take the circuitous route by the river. The entrance is marked by a guard-house on each side, and its vicinity may be known by a long range of batteries half a mile above on the same side of the river.

Paklat Bon is a small village where the canal re-enters the river alongside some floating houses.

Bangkok, the capital and seat of trade of Siam, is about 25 miles from the sea, following the river course, or about 14 miles direct. The first important objects seen, in approaching the city, are the American consulate on the west, Puddicombe's ship-building yard, and Russell & Co.'s godowns on the east. Above these are some handsome temples, the French consulate and cathedral, the custom-house, British and Portuguese consulates, and the godowns of some English merchants, all on the east bank; the only conspicuous object on the other side being a fort nearly opposite the British consulate. Beyond this

* See Admiralty Plan of Menam Chau-Phya or Bangkok river, No. 809; scale, mile = 1.5 inches.

CITY OF BANGKOK.

the river on either bank is lined with floating houses, over which can be seen thick clusters of wooden houses built on piles, and several magnificent temples. The second creek above the British consulate leads to the Sampeng bazaar, an extensive and well-supplied market. Farther on is the walled city, on the east bank; and in the opposite suburb are some European stores and lodgings-houses, the palaces of the Phra-Klang and Phra-Kalabome, the old British factory, palace of the Kromma Luang, several European merchants' residences, and some temples, one of them a lofty pyramidal building, above which vessels seldom anchor.

In the city itself are many temples conspicuous for beauty. The palaces of their Majesties the first and second Kings are very extensive buildings, with a long river frontage, furnished with elegant and commodious landing-stages for royal use.

Floating houses continue for 3 or 4 miles above the first King's palace with few interruptions.

The population of Bangkok is estimated at 800,000.

The Bar of the Bangkok river has its outer edge 5 miles to the southward of the west point of the river entrance; the shoalest part is about a mile over north and south, and has 3 feet depth at low water springs. The bar commences at about one-third of a mile to the southward of the fishing-stakes. The west bank dries at low water and is steep-to, and as the deepest part of the channel lies along its edge, care must be taken in approaching it. The native pilots usually mark its edge with bamboos, but they are frequently displaced. The east bank dries at very low tides, but shoals gradually from the channel.

Anchorage.—The best anchorage at the Menam bar for communicating with the shore is in $8\frac{1}{2}$ fathoms, with the two river points well overlapping, and the west point mound bearing N. $\frac{1}{2}$ W. or North $6\frac{1}{2}$ miles.

Caution.—Approaching the Menam bar from the southward in the north-east monsoon, it will be necessary, when near the head of the gulf to allow for a westerly current which occasionally runs with great strength along the edge of the bank, and vessels set to leeward by it have found considerable difficulty in regaining the anchorage. For this reason, boats working out of the river should not attempt to cross the bar before they can make sure of fetching their ships.

Tides.—From the following observations, taken at the anchorage off the Bangkok river bar, it will be seen that the tides near the river are very irregular:—

		A.M.	A.M.	ft.
February	5th, New Moon	H.W. 8.00	Rise 11 springs.	
	1st Qr.	" 8.00	" "	9 neaps.
April	5th, New Moon	" 4.30	" "	8 $\frac{1}{2}$ springs.
"	11th, 1st Qr.	" 7.00	" "	7 $\frac{1}{2}$ neaps.
"	12th, Full Moon	" 5.30	" "	7 $\frac{1}{2}$ springs.
"	27th, Last Qr.	" midnt.	" "	8 $\frac{1}{2}$ neaps.

At and near the spring there were only two tides in 24 hours, and four tides at neaps. These irregularities caused by the gradual change from one

to the other, are occasionally increased and confused by changes of wind in the gulf.

In the month of April the river is at its lowest level, and the tide observations during this month gave 3 feet on the bar at low water springs, and 10½ feet at high water. Towards the end of the rainy season (the beginning of October) the river is much swollen, and its banks are frequently flooded and the country inundated. The bar has then 5 feet on it at low water springs, and 14 and 15 feet at high water, and the water is said to be quite fresh at low tide.

The soundings in the late survey are reduced to the lowest level on the bar observed in the month of April.

Outside the bar and near the anchorage the flood sets to the westward, and the ebb to the eastward, altering its direction occasionally, according to the strength of the river stream. Along the eastern shore of the gulf towards Cape Liant, the ebb sets to the southward and flood to the northward.

It is high water at Cape Liant about the same time as at the Menam bar, and the rise is only 6½ feet.

Directions for the Gulf of Siam.—From Bangkok, the passage down the Gulf of Siam will frequently be shortened, in the north-east monsoon by sighting the Kusrovie rock, and passing between the Tanqualah group and Koh Tron. Vessels should keep well to the eastward of Pulo Panjang, and if bound to Singapore they will make the passage quicker by hauling well out into the China sea, passing about 20 miles outside Pulo Brala, outside Pulo Aor, and then steering for Barbucit hill, so as to allow for the southerly current setting across the strait.

From Bangkok to Singapore, in the south-west monsoon, keep the western shore aboard, passing inside the Redangs, Pulo Kapas, and Pulo Brala. Below Pulo Kapas, everything depends on keeping in shore out of the current, and taking advantage of the land sea breezes.

From the 2d of April until the 15th of May 1856, the *Saracen* remained at anchor off the Menam bar, during which interval the river was surveyed, and the four-mile boundary line round the town of Bangkok defined. Towards the middle of April the weather changed, and became gloomy and threatening; at the latter end of the month there were several days continuous and heavy rain, after which the weather became showery, and continued so during the remainder of the above period.

On the 15th at noon the *Saracen* sailed for Singapore, and in the upper part of the gulf had calms and light winds from the eastward, drawing round to the southward as the Redang islands were neared. A southerly current was experienced the whole way down to Pulo Aor.

Winds and Weather.—The north-east monsoon, in the Gulf of Siam, set in early in November. It is usually preceded by a month of equally, variable, and uncertain weather.

In the months of November, December, and January, the wind blows between N.N.E. and East; generally strong breezes with a low temperature, occasionally as low as 65°. Along the eastern shore of the gulf at this time the sky is frequently unclouded for a week together, but on the opposite coast the weather is wet and stormy.

In November and December, strong squalls, with very heavy thunder and lightning, are occasionally met with near Pulo Panjang.

Towards the end of January, the wind blows more from the eastward, and abates in strength.

In February, the wind is more constant from E.S.E. than from any other point; it veers between S.E. and N.E., with occasional calms and squalls. Fine weather and smooth water now prevail all over the gulf.

In March, the monsoon cannot be depended on. In the middle of the gulf, calms prevail, with southerly winds near the shore, and occasional land and sea breezes. Towards the end of this month the weather becomes hot and sultry.

April is the hottest month of the year; calms may be expected near the middle of the gulf; land and sea breezes near the shore, and occasional slight squalls.

In May, clouds begin to bank up, and an occasional shower relieves the intensity of a vertical sun. The south-west monsoon sets in about the middle of the month, sometimes preceded by light flaws of wind and fine weather, but usually with squally weather and occasional heavy falls of rain. In the months of June, July, and August, the south-west monsoon blows strong, with occasional showers, but generally very fine weather along the western shore of the gulf; out in the middle a rough sea; and along the eastern shore a strong breeze with much rain, and occasionally a fresh gale.

In September, the wind is very unsteady, veering between S.W. and W.N.W. in strong gusts. Heavy and continuous rain may be expected in this month.

In October, the wind veers between West and North, and abates considerably in strength; the rain squalls are less frequent. Towards the end of the month the wind settles in the north, and the cold weather and fine season set in.

At the bar of the Bangkok river, land and sea breezes generally prevail, veering by the east or west according to the monsoon.

The south-west monsoon is scarcely felt close in shore, between Patani cape and the Redang islands, its course being interrupted by the high land in that neighbourhood. To the southward of Pulo Kapas it takes the direction of the coast, veering a few points on or off shore by day or night under the influence, alternately, of the sea and land breezes.

White squalls are said to prevail in the gulf, particularly in the month of May.

Black squalls are frequent in the south-west monsoon; they rise in the westward, accompanied by a heavy bank of clouds, and blow with great violence for a short time, and are frequently accompanied by heavy rain. Heavy gales are unknown in the gulf.

Currents.—The currents in the Gulf of Siam, near the middle, are generally weak and variable, but near the land, in the strength of the monsoons, strong sets may be expected. In the south-west monsoon a strong northerly current was found from Lem Chong P'ra to Sam-roi-yot point. In the north-east monsoon there is frequently a strong set across the head of the gulf to the westward.

In the neighbourhood of the Redang islands and Pulo Obi, the strong out-

SAILING DIRECTIONS FOR THE GULF OF SIAM.

rents prevalent in the China sea may be expected. The China sea current does not appear to enter the gulf farther than a few miles, but is said to set across it in both monsoons.

The flood tide from the China sea appears to meet the western shore of the gulf, and divides somewhere near cape Patani; for at the Redang islands the flood sets to the southward, and at Singora and Koh Krah it was found setting to the northward.

A TABLE OF POSITIONS,
WITH
MERIDIAN DISTANCES MEASURED IN THE GULF OF SIAM,
BETWEEN JANUARY 1856 AND FEBRUARY 1858.

PLACE.		Meridian Distance.	Longitude, East.	Latitude North.	Spot & Observation.
From.	To.				
Hongkong.	Pulo Obi .	A. m. sea. 0 27 30-26 W.	104 47 20 6	5 25 27	Square rock on south-west point of island.
Kowloon point.	Pulo Panjang .	0 5 23-20 W.	103 20 56-25	9 18 14	North-west corner of E. W. bay.
Pulo Obi .	Pulo Way .	0 7 41-3 W.	103 52 11-1	9 55 11	South extreme of sandy bay near the middle of the northeast side of West Island.
Pulo Way .	Koh Si-chang .	0 8 16-49 W.	100 48 03 75	12 9 56	Palm trees at southwest point of Koh-Kam, 1½ mile E. by S. of the peak of Koh Si-chang.
Koh Si-chang .	Paknam .	0 9 55-17 W.	100 24 16-9	12 30 53	Flagstaff at landing place.
Koh Si-chang .	Cape Liant .	0 0 30-0 E.	100 56 56	12 55 06	North-west rock, Koh Mesan, W.S.W. 1½ mile from south extremity of Cape Liant.
Singapore battery.	Paknam .	0 13 3-26 W.	100 24 26-1		
Singapore .	Great Redang island.	0 3 18-37 E.	103 00 31-45	5 44 21	Bukit Mara.
Great Redang island.	Turtle-back island.	0 1 38-06 W.	103 25 50-7	5 49 40	South side.
Ditto .	S.W. point of Pulo Kapas.	0 0 57-08 E.	103 14 46-65	5 13 01	South-west point of the island.
Ditto .	Kalantan .	0 2 43-44 W.	103 19 29 85	6 11 53	Entrance of a small river to the eastward of Kalantan river.
Ditto .	Singora .	0 9 41-79 W.	100 24 54-6	7 13 54	South-west point of Pulo Ticoa.
Singora .	Koh Krah .	0 0 37 E.	100 44 09-6	8 24 47	South-east point of island.
Ditto .	Sing island .	0 4 19-13 W.	99 30 07-65	11 3 43	White rock on east side of island.
Sing island .	South horn of Kral-kow.	0 1 8-37 E.	99 47 11-07	11 45 28	Middle of north-east side of peninsula.
Ditto .	Bangkok .	0 3 50-41 E.	100 27 43-95	13 44 20	Old British factory.
Paknam flag-staff.	Ditto .	0 0 23-51 W.	100 28 23 55	13 44 20	Old British factory.
Koh-si-chang .	Chong Samit .	0 2 29-13 E.	101 25 20-55	12 30 32	Brown rock, outer rock, off Lam Ya.
Ditto .	Koh Chang .	0 5 45-82 E.	103 14 31-05	12 1 20	Island on east side.
Koh-chang observatory.	Bar island, Chentabun.	0 4 59-78 E.	103 03 00-45	12 27 43	At the entrance of river.
Ditto .	Kuravie rock .	0 2 08 E.	102 44 51-9	11 07 13	Centre.
Ditto .	Kanmoi island .	0 6 05 01 E.	103 45 45	10 24 44	West point of island.
Ditto .	Rocky islands, off Kamput.	0 7 44-42 E.	104 10 37 35	10 27 58	Centre.
West point, Kanmoi island.	Tanqualah .	0 2 23 W.	103 7 47-85	10 15 24	North point of middle island of the group.
Ditto .	Koh Prius .	0 3 22 W.	102 55 49 95	10 17 15	Southern rock of the group.
Ditto .	Pulo Damar .	0 0 38-27 E.	104 20 11-4	9 41 54	Rocky island on east side.

PLACES		Meridian Distance.	Longitude East.	Latitude North.	Spot of Observation.
From	To				
Singapore	Kamput	A m. sea 0 1 23 E.	104 0 30-0	10 27 58	Rocky island off Kam- put.
Redang Island	Buita Rackfl Island	0 5 10-00 W.	101 43 38	6 40 38	Centre.
Ditto	Cape Fatani	0 6 51-30 W.	101 17 38	6 53 01	North-east point of the cape.
Cia point	Paknam	0 2 16-61 E.	100 34 4-65	13 26 32	Flagstaff at landing place.
Bangkok	Ayuthia	0 0 17-00 E.	100 33 33-55	14 20 32	First King's palace, south corner of city.
Koh Chang	Klong Koh- kong	0 2 45-06 E.	103 55 55-35	11 23 0	South point of river en- trance.
Ditto	Rong Sam Lem	0 4 34-77 E.	103 30 43-6	10 36 30	North point of Great bay in Rong Sam Lem.
Kamput	Pulo Obi	0 3 27-70 E.	104 47 36-85	..	Square rock on south- west point of island.
Pulo Obi	False Pulo Obi	0 1 0-10 W.	104 30 17	6 56 42	West side of island.
Kamput	Teekoon Island	0 2 28-30 E.	104 47 52-2	9 27 12	North-west side of island.

All the above positions depend upon the position of the saluting battery at Singapore, which, according to Raper, is in long. $103^{\circ} 50' 00''$ E. Kowloon point, Hongkong, is assumed to be in longitude $114^{\circ} 10' 15''$ E.

EXPLANATION OF SIAMESE TERMS.

<u>Siamese.</u>	<u>English.</u>	<u>Siamese.</u>	<u>English.</u>
Bang	Village.	Nam-Rhum	Rising tide.
Bon	Upper.	Nam-o	Full tide.
Buri	City.	Nam-long	Ebbing tide.
Dam	Black.	Nei	Inner.
Deng	Red.	Noi	Lesser.
Din nian	Clay.	Nok	Outer.
Din-so-phon	Chalk.	Pa	Forest.
Fai	Fire, light.	Pak	Mouth.
Hin	Rock, stone.	Pak-nam	Mouth of a river.
Hatsai	Sandbank.	Pom	Fort.
Khao	Mountain, hill.	Rong-pa-si	Custom-house.
Khao	White.	Sai	Sand, gravel.
Khlon	Mud.	Sas-thong	Flag-staff.
Klong	Canal or creek.	Tha-leh	Sea, lake.
Koh	Island.	Thai	Siamese.
Kok	Olives.	Thit nua	North.
Leam	Point, promontory.	Thit tai	South.
Lang-tao	Bar (of a river).	Thit tawan-ek	East.
Lang	Lower.	Thit tawan-tok	West.
Lat	A cut, short cut.	Thi-thot-samó	Anchorage.
Mai	New.	Wat	Temple.
Muang	Town.	Yot	Peak.
Nam	Water, or tide.	Yai	Greater.

REGULATIONS FOR PREVENTING COLLISIONS AT SEA.

Issued in pursuance of the [British] Merchant Shipping Act Amendment Act, 1862, and of an Order in Council, dated 9th January, 1863.

These Rules apply to all ships, whatever their nationality, within the limits of British jurisdiction; and to British and French ships, whether within British jurisdiction or not.

Art. 1. In the following Rules, every steam ship which is under sail and not under steam is to be considered a sailing ship; and every steam ship which is under steam, whether under sail or not, is to be considered a ship under steam.

RULES CONCERNING LIGHTS.

Art. 2. Lights.—The lights mentioned in the following Articles, numbered 3, 4, 5, 6, 7, 8, and 9, and no others, shall be carried in all weathers, from sunset to sunrise.

Art. 3. Lights for steam ships.—Sea-going steam ships when under weigh shall carry:—

(a.) **AT THE FOREMAST HEAD**, a *bright white light*, so fixed as to show a uniform and unbroken light over an arc of the horizon of 20 points of the compass; so fixed as to throw the light 10 points on each side of the ship, viz., from right ahead to 2 points abaft the beam on either side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least five miles:

(b.) **ON THE STARBOARD SIDE**, a *green light* so constructed as to throw a uniform and unbroken light over an arc of the horizon of 10 points of the compass; so fixed as to throw the light from right ahead to 2 points abaft the beam on the starboard side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least two miles;

(c.) **ON THE PORT SIDE**, a *red light*, so constructed as to show an uniform and unbroken light over an arc of the horizon of 10 points of the compass; so fixed as to throw the light from right ahead to 2 points abaft the beam on the port side; and of such a character as to be visible on a dark night, with a clear atmosphere, at a distance of at least two miles:

(d.) The said green and red side lights shall be fitted with inboard screens, projecting at least three feet forward from the light, so as to prevent these lights from being seen across the bow.

Art. 4. Light for steam tugs.—Steam ships, when towing other ships, shall carry two *bright white mast-head lights vertically*, in addition to their side lights, so as to distinguish them from other steam ships. Each of these mast-head lights shall be of the same construction and character as the mast-head lights which other steam-ships are required to carry.

REGULATIONS FOR PREVENTING COLLISIONS AT SEA.

Art. 5. *Lights for sailing ships.*—Sailing ships under weigh, or being towed, shall carry the same lights as steam ships under weigh, with the exception of the white mast-head lights, which they shall never carry.

Art. 6. *Exceptional lights for small sailing vessels.*—Whenever, as in the case of small vessels during bad weather, the green and red lights cannot be fixed, these lights shall be kept on deck, on their respective sides of the vessel, ready for instant exhibition; and shall, on the approach of or to other vessels be exhibited on their respective sides in sufficient time to prevent collision, in such manner as to make them most visible, and so that the green light shall not be seen on the port side, nor the red light on the starboard side.

To make the use of these portable lights more certain and easy, the lanterns containing them shall each be painted outside with the colour of the light they respectively contain, and shall be provided with suitable screens.

Art. 7. *Lights for ships at anchor.*—Ships, whether steam ships or sailing ships, when at anchor in roadsteads or fairways, shall exhibit, where it can best be seen, but at a height not exceeding twenty feet above the hull, a *white light*, in a globular lantern of eight inches in diameter, and so constructed as to show a clear uniform and unbroken light visible all round the horizon, and at a distance of at least one mile.

Art. 8. *Lights for pilot vessels.*—Sailing pilot vessels shall not carry the lights required for other sailing vessels, but shall carry a *white light* at the mast head, visible all round the horizon,—and shall also exhibit a *Flare-up light* every fifteen minutes.

Art. 9. *Lights for fishing vessels and boats.*—Open fishing boats and other open boats shall not be required to carry the side lights required for other vessels; but shall, if they do not carry such lights, carry a lantern having a *green slide* on the one side and a *red slide* on the other side; and on the approach of or to other vessels, such lantern shall be exhibited in sufficient time to prevent collision, so that the green light shall not be seen on the port side, nor the red light on the starboard side.

Fishing vessels and open boats when at anchor, or attached to their nets and stationary, shall exhibit a *bright white light*.

Fishing vessels and open boats shall, however, not be prevented from using a *flare-up* in addition, if considered expedient.

RULES CONCERNING FOG SIGNALS.

Art. 10. *Fog signals.*—Whenever there is fog, whether by day or night, the fog signals described below shall be carried and used, and shall be sounded at least every five minutes, viz :—

(a.) Steam ships under weigh shall use a steam whistle placed before the funnel, not less than eight feet from the deck :

(b.) Sailing ships under weigh shall use a fog-horn :

(c.) Steam ships and sailing ships when not under weigh shall use a bell.

STEERING AND SAILING RULES.

Art. 11. *Two sailing ships meeting.*—If two sailing ships are meeting end on, or nearly end on, so as to involve risk of collision, the helms of both shall be put to port, so that each may pass on the port side of the other.

Art. 12. Two sailing ships crossing.—When two sailing ships are crossing so as to involve risk of collision, then, if they have the wind on different sides, the ship with the wind on the port side shall keep out of the way of the ship with the wind on the starboard side; except in the case in which the ship with the wind on the port side is close hauled and the other ship free, in which case the latter ship shall keep out of the way; but if they have the wind on the same side, or if one of them has the wind aft, the ship which is to windward shall keep out of the way of the ship which is to leeward.

Art. 13. Two ships under steam meeting.—If two ships under steam are meeting end on, or nearly end on, so as to involve risk of collision, the helms of both shall be put to port, so that each may pass on the port side of the other.

Art. 14. Two ships under steam crossing.—If two ships under steam are crossing so as to involve risk of collision, the ship which has the other on her own starboard side shall keep out of the way of the other.

Art. 15. Sailing ships and ships under steam.—If two ships, one of which is a sailing ship, and the other a steam ship, are proceeding in such directions as to involve risk of collision, the steam ship shall keep out of the way of the sailing ship.

Art. 16. Ships under steam to slacken speed.—Every steam ship, when approaching another ship, so as to involve risk of collision, shall slacken her speed, or if necessary, stop and reverse; and every steam ship shall, when in a fog, go at a moderate speed.

Art. 17. Vessels overtaking other vessels.—Every vessel overtaking any other vessel shall keep out of the way of the said last-mentioned vessel.

Art. 18. Construction of Articles 12, 14, 15, and 17.—Where by the above rules one of two ships is to keep out of the way, the other shall keep her course, subject to the qualifications contained in the following Article.

Art. 19. Proviso to save special cases.—In obeying and construing these Rules, due regard must be had to all dangers of navigation; and due regard must also be had to any special circumstances which may exist in any particular case rendering a departure from the above Rules necessary in order to avoid immediate danger.

Art. 20. No ship, under any circumstances, to neglect proper precautions.—Nothing in these Rules shall exonerate any ship, or the owner, or master, or crew thereof, from the consequences of any neglect to carry lights or signals, or of any neglect to keep a proper lookout, or of the neglect of any precaution which may be required by the ordinary practice of seamen, or by the special circumstances of the case.

T. H. FARRER,
Assistant Secretary Marine Department.

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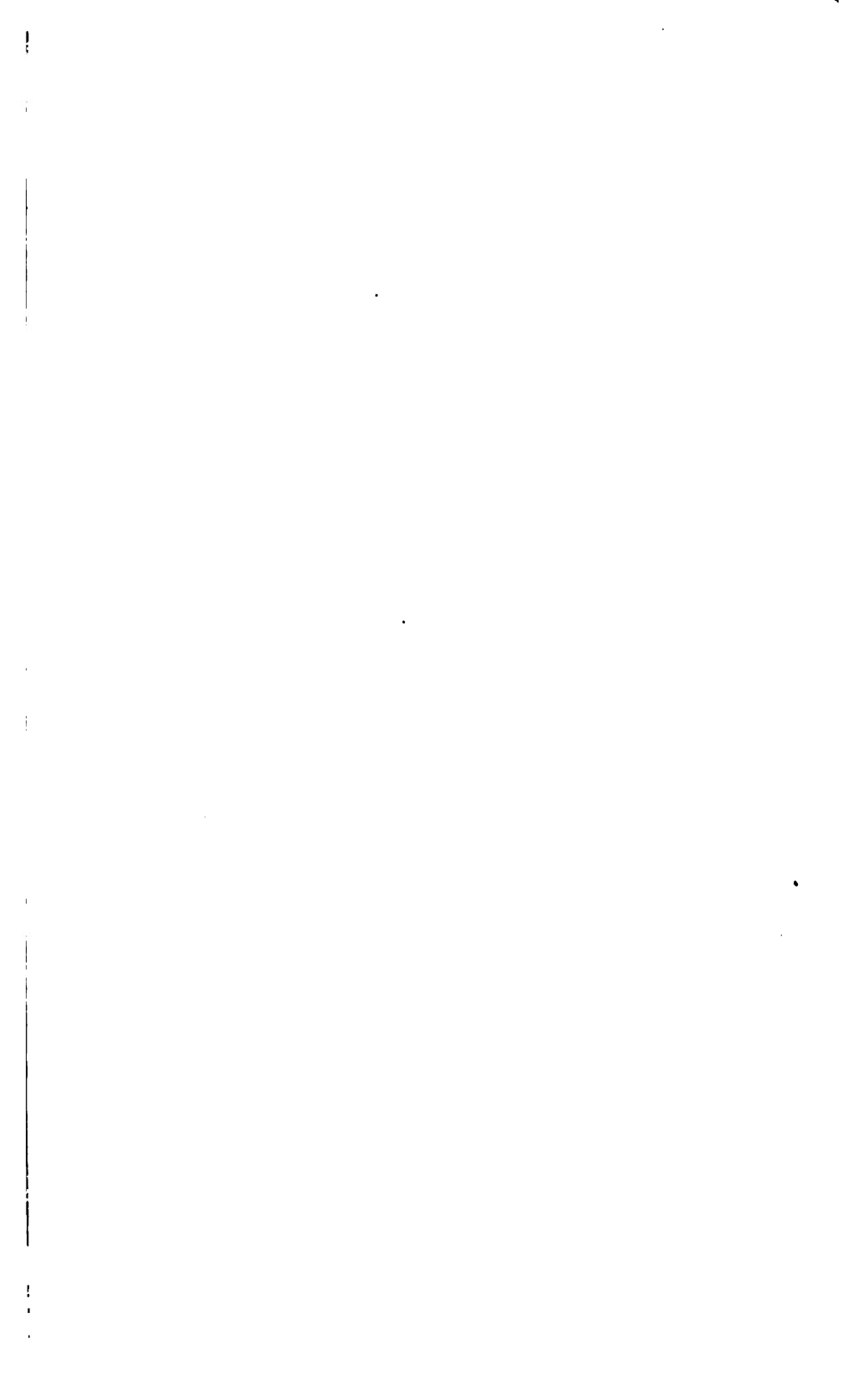
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